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ENGLISH BOTANY;

OR,

COLOURED FIGURES

OF

BRITISH PLANTS,

WITH THEIR

ESSENTIAL CHARACTERS, SYNONYMS, AND PLACES OF GROWTH:

TO WHICH WILL BE ADDED,

OCCASIONAL REMARKS.

BY

JAMES EDWARD SMITH, M.D. F.R.S.

MEMBER OF THE IMP. ACAD. NATURÆ CURIOSORUM, THE ACADEMIES OF STOCKHOLM, UPSAL, TURIN, LISBON, LUND, BERLIN, PHILADELPHIA, AND THE NAT. HIST. SOCIETIES OF PARIS AND MOSCOW;
PRESIDENT OF THE LINNÆAN SOCIETY.

THE FIGURES BY
JAMES SOWERBY, F.L.S.

——"VIRESQUE ACQUIRIT EUNDO."——*Virg.*

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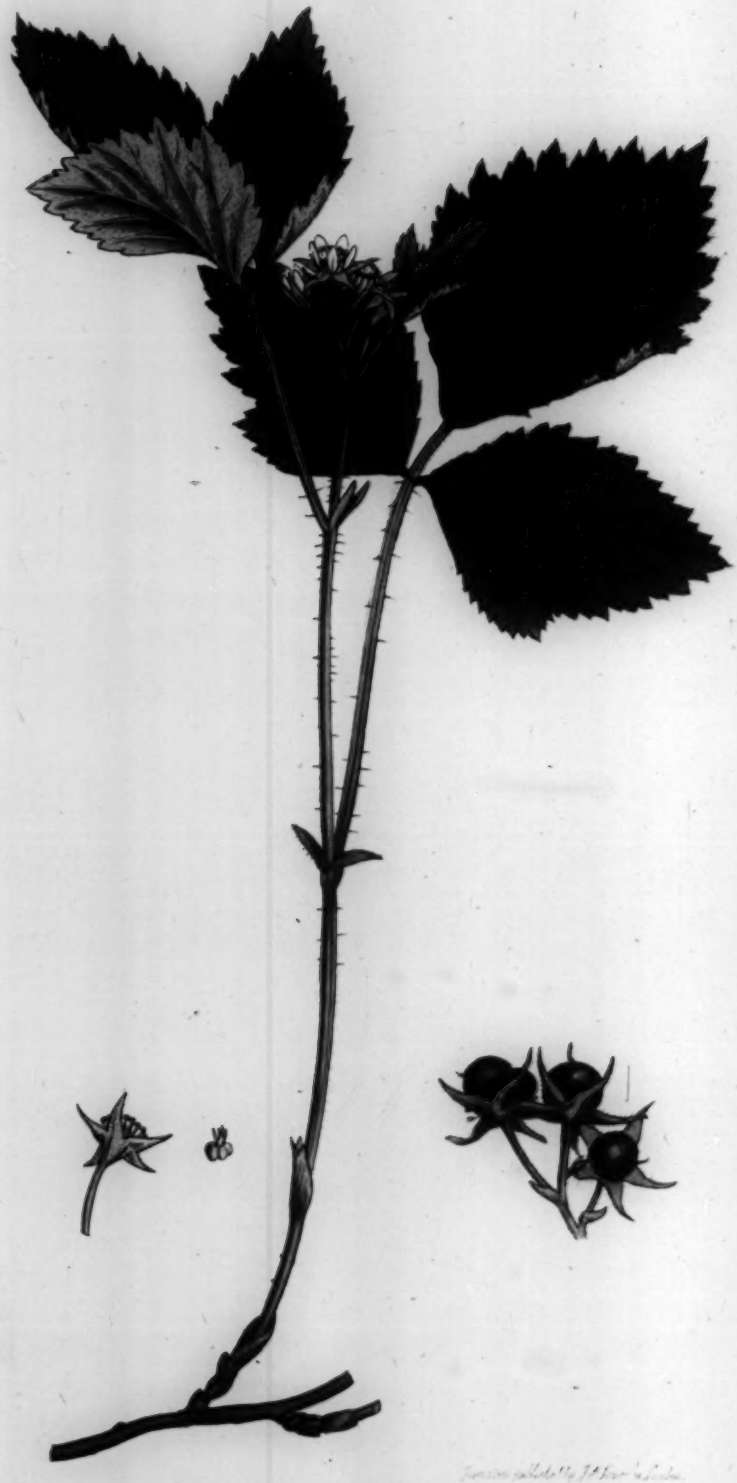


RUBUS saxatilis.

Stone Bramble.

ICOSANDRIA Polygynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Berry* superior, composed of several single-seeded grains.

SPEC. CHAR. Leaflets three, slightly downy. Runners creeping, herbaceous. Panicle of few flowers.

SYN. Rubus saxatilis. *Linn. Sp. Pl.* 708. *Sm. Fl. Brit.* 544. *Huds.* 221. *With.* 470. *Hull. ed.* 2. 150. *Fl. Dan. t.* 134. *Ger. em.* 1273.
Chamærubus saxatilis. *Raii Syn.* 261.

AMONG the most elegant of its genus is the *Rubus saxatilis*, a northern species, very abundant in Lapland, less so in this island, a native of lofty mountains, as well as of dry stony woods about their neighbourhood. Mr. Borrer gathered our specimen in the classic shades of Roslin, near

> ----------" that chapel proud,
> Where Roslin's chiefs uncoffined lie;
> Each baron, for a sable shroud,
> Sheathed in his iron panoply."

The whole herb is of a slender delicate habit, of a light green hue, slightly downy, not hoary. The root is fibrous and perennial, throwing out very long trailing runners, either naked or leafy, by which the plant spreads widely, but which do not blossom till their extremities have taken root. Stems solitary, erect, unbranched, a span high, slightly angular, leafy, bearing a few weak spreading prickles, such as are also observable on the footstalks, though both parts are sometimes without them. The leaflets are three, rarely five, acute, doubly and unequally crenate. Panicle terminal, of a few small greenish-white flowers, with a pointed calyx and narrow upright petals. Fruit of a very few large distinct crimson grains, seldom more than three, often solitary, gratefully acid. The old Swedish writers called this plant a *Labrusca*, or Wild Vine, in allusion to its clustered berries and trailing habit.

Jackson published by Jas. Sowerby London

BRASSICA campestris.

Field Cabbage, or Wild Navew.

TETRADYNAMIA Siliquosa.

GEN. CHAR. *Cal.* erect, partly cohering. *Seeds* globular. *Pod* nearly cylindrical; the partition prominent, awl-shaped. *Glands* 4.

SPEC. CHAR. Root and stem slender. Leaves heart-shaped, pointed, clasping the stem; lowermost lyrate, toothed, somewhat hispid.

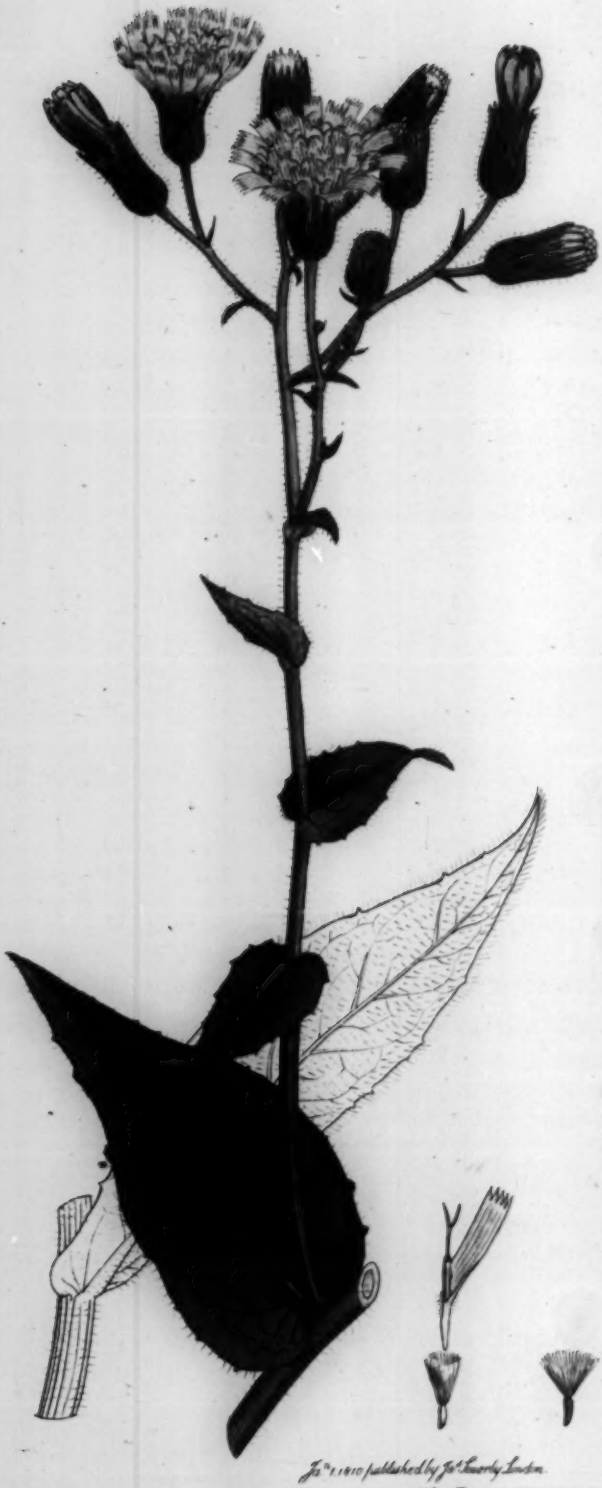
SYN. Brassica campestris. *Linn. Sp. Pl.* 931. *Sm. Fl. Brit.* 718. *Scholl. Barb.* 153.

B. Napus? *Borrer in Turn. & Dillw. Bot. Guide,* 588. Mr. Borrer.

GREAT uncertainty has existed among British authors, even from the time of Ray, concerning this plant. Possibly this is the *Napus sylvestris* of that author, and his *Rapum sylvestre non bulbosum*, mentioned under it, may be our *B. Napus*, *t.* 2146, to which the synonyms of Fuchsius and Bauhin, quoted doubtfully under *campestris* in *Fl. Brit.*, seem rather to belong. Hudson's *B. campestris* is a mere yellow variety of *orientalis*, *t.* 1804, which *Fl. Dan. t.* 550 may also be.

Mr. E. Forster, who favoured us with this specimen in August last, assures us it is the common wild Navew, growing abundantly by the sides of rivers, marsh ditches, &c., and that our *B. Napus* is the Rape- or Cole-seed, which is so commonly cultivated.

Our present plant agrees precisely with the Linnæan specimens. The root is said to be annual, and is of a taper form. Stem erect, branched, round, leafy, rather glaucous, sometimes rough with minute, bulbous, spreading bristles, such as are found abundantly on the lyrate radical leaves, which commonly, but not always, wither before the flowers come to perfection. The stem-leaves are heartshaped, and clasp the stem at their base, elongated, somewhat pinnatifid; the uppermost quite entire. Flowers yellow. Calyx-leaves scarcely cohering, but rather distant. Petals roundish in the limb. Pods upright, cylindrical, or very obscurely quadrangular, veiny, the seeds slightly projecting, the beak awlshaped, striated, square at its base.



Jan.ry 1.1810 published by Jas. Sowerby London

HIERACIUM prenanthoides.

Rough-bordered Hawkweed.

SYNGENESIA Polygamia-æqualis.

GEN. CHAR. *Recept.* nearly naked, dotted. *Cal.* imbricated, ovate. *Down* simple, sessile.

SPEC. CHAR. Stem erect, many-flowered, solid. Leaves somewhat toothed, rough near the edge, glaucous beneath, clasping the stem; the lower ones elliptic-oblong; upper heart shaped. Flowerstalks glandular and cottony.

SYN. Hieracium prenanthoides. *Villars. Dauph. v.* 3. 108. *With.* 685. *Sym.* 173. *Hull.* 176. *ed.* 2. 231.

H. spicatum. *Allion. Ped. v.* 1. 218. *t.* 27. *f.* 1 *and* 3. *Dicks. Tr. of Linn. Soc. v.* 2. 288. *Crypt. fasc.* 2. 29.

THIS species was brought from Scotland many years ago by Mr. Dickson, and given to Mr. E. Forster, from whose garden we had it last autumn. It is perennial, flowering in the latter part of the summer. The synonyms of Villars and Allioni are determined by authentic specimens, but Haller's n. 43 α, we are now certain, is not this plant, though his β seems to come very near it. It is safest to exclude his synonym from the *Fl. Brit.* altogether, as well as Boccone's *t.* 53.

The plant before us differs from *H. denticulatum*, *t.* 2122, with which it was confounded in *Fl. Brit.*, in having the leaves embrace the stem by their rounded dilated base, and in their singular roughness near the edge, which there forms a bristly border. These marks are enough to distinguish them. The Swiss *Hieracia* are so obscure, and the authors who treat of them so misquote each other, that it is very difficult to come to any certainty abou them; but we believe the *cydoniæfolium* of Villars is Haller's n. 43 α, and not his n. 45, which is *paludosum*. We have no authentic specimen of Haller's n. 43 β, which deficiency leaves us in doubt concerning it.—By several dried ones, sent from Mr. G. Don, we believe the Hawkweeds of Scotland are not yet all determined, but the greatest attention to living plants can alone enable us to reduce them to order. When that is accomplished, we have ample materials for settling their synonyms.

Jones ad. pallis. Lond. by J.S. & Co. Lyndon.

CAREX Micheliana.

Blunt-fruited Black Carex.

MONOECIA Triandria.

GEN. CHAR. Male, *Catkin* imbricated. *Cal.* of one scale. *Cor.* none. Female, *Catkin* imbricated. *Cal.* of one scale. *Cor.* none. *Stigmas* 2 or 3. *Seed* clothed with a swelling tunic.

SPEC. CHAR. Spikes upright, cylindrical; the female ones stalked. Glumes all obtuse and pointless. Fruit obovate, very blunt.

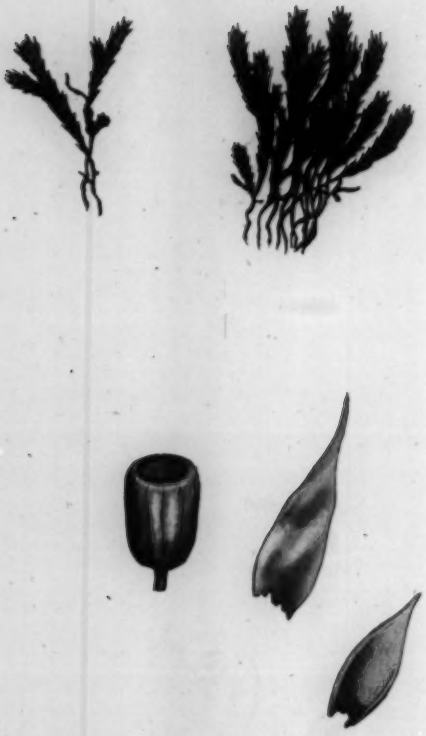
SYN. Carex Micheliana. *Sm. Tr. of Linn. Soc. v.* 5. 270. *Fl. Brit.* 1004.

C. ambleocarpa. *Willd. Sp. Pl. v.* 4. 307.

Cyperoides foliis caryophylleis, caule exquisitè triangulari, spicis habitioribus, squamis curtis, obtusè mucronatis, capsulis turbinatis brevibus confertis. *Mich. Gen.* 62. *t.* 32. *f.* 12.

THE introduction of this, as a distinct species, into the *Flora Britannica* having led botanists into a mistake, we judge it right to lay before them all the sources of our error, by exhibiting a plate of the specimen on which it was founded, and which was received from Professor Beattie of Aberdeen as a variety of *C. recurva*, *t.* 1506, such as we are now convinced it really is. The names of *Micheliana* and *ambleocarpa* are therefore alike superfluous. The synonym of Micheli, though adopted from his figure and definition alone, we see no cause to reject. It becomes us here further to acknowledge that all British botanists have done wrong in preferring their countryman Hudson's name of *recurva*, to the older, and beyond all comparison better, one of Scopoli, *glauca*, whose claims we incautiously overlooked in *Fl. Brit.*

The plant before us differs from the usual state of *recurva* in having numerous male spikes, and a smooth fruit; circumstances which, however important in most *Carices*, prove in this case to be variable. The turgescence of the fruit is more or less, according to its age and perfection. The compound lower spike in our specimen is, of course, an accident.



Sowerby published by Jas. Sowerby London.

GYMNOSTOMUM imberbe.

Branched Green Beardless-moss.

CRYPTOGAMIA Musci.

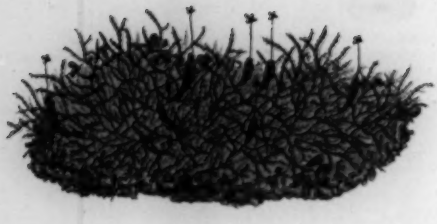
GEN. CHAR. *Caps.* without a fringe. *Lid* deciduous. *Veil* separating entire from the base.

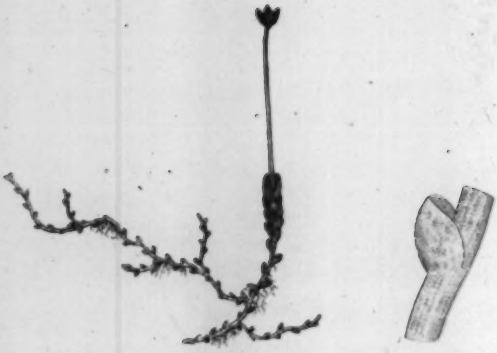
SPEC. CHAR. Stem much branched, spreading. Leaves ovate, without rib or nerve, green at the point. Capsule bell-shaped, nearly sessile.

DISCOVERED on dry rocks upon mountains in the west of Ireland by Miss Hutchins, who in 1809 sent specimens to Mr. Turner, which he has kindly communicated to us.

This moss comes nearest to *G. ciliatum*, *t.* 1179, from which it differs in wanting the essential character of that species, the white transparent point of its leaves, even of the upper and longer ones which overtop the fruit. There is also a more membranous habit in all the leaves, and their margins are always somewhat revolute. The old ones are very black. The capsules, which rarely occur, are obscurely furrowed and their mouths contracted, but whether this be the effect of drying in a young state may admit of doubt. We have seen no lid.

Ehrhart's own specimen of his *Hedwigia Anodon*, Crypt. 192, approaches this in having revolute leaves, with much less transparency in their tips than is usual in *ciliatum*; but those which surround its fruit have the proper pellucid and even fringed termination, not to be seen in our *imberbe*; nor do the colour and habit of Ehrhart's plant resemble ours, being precisely like the common *ciliatum*.





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JUNGERMANNIA gracillima.

Slender-branched Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.

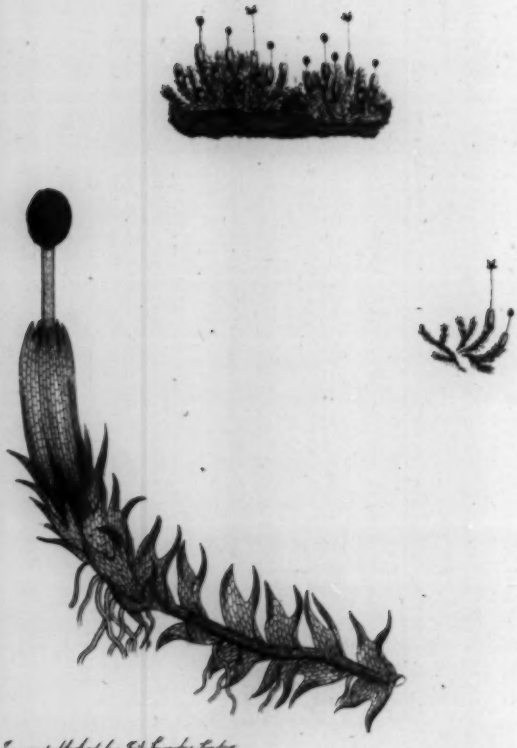
Capsule on a stalk rising from a sheath, of 4 valves.

Seeds attached to elastic filaments.

SPEC. CHAR. Stems branched, creeping. Leaves alternate, clasping the stem, roundish, concave, entire, without auricles. Sheaths terminal, cylindrical, obtuse.

FOR this *Jungermannia*, which, as far as we can discover, is a nondescript, we are obliged to Mr. Templeton, who communicated it nine years ago from the neighbourhood of Belfast. The same has been observed by the Rev. Mr. Francis on Edgefield heath, Norfolk, between the two woods.

It ranges near our *minutissima*, *t.* 1633, but is not near so small, and grows on the ground; differing in its stem-clasping leaves, and more essentially in its sheaths, which are terminal, cylindrical, obtuse, subtended by several imbricated leaves larger than the rest, and these leaves, as well as the sheath, are in our specimens tinged with red. The fruitstalk is thrice as tall as in the *minutissima*, and the capsule brown.—The stems are very slender and pellucid, branched, creeping, somewhat zigzag, clothed with small, scattered, pellucid, apparently fleshy leaves, of a roundish concave undivided figure, always more or less embracing the stem with their base, and destitute of any appendages.



Jan 1 1813 published by J. & J. Sowerby London

JUNGERMANNIA bicuspidata.

Forked Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

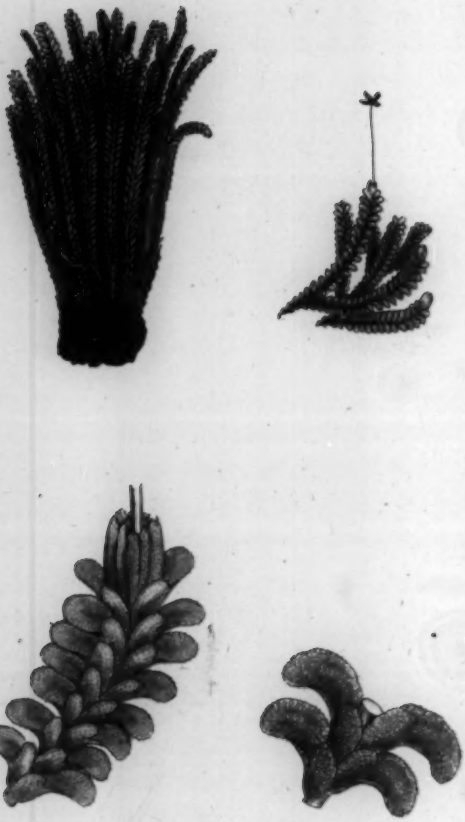
SPEC. CHAR. Stems branched, creeping. Leaves in two rows, curved to one side, oblong, cloven half-way down, sharp-pointed. Sheaths terminal, cylindrical, elongated, with many sharp teeth.

SYN. Jungermannia bicuspidata. *Linn. Sp. Pl.* 1598. *Huds.* 511. *With.* 873. *Hull.* 278. *Relh.* 438. *Sibth.* 310. *Abbot.* 252; excluding their citations of *Engl. Bot. t.* 281.
Lichenastrum trichomanis facie, foliolis bifidis, minimum. *Raii Syn.* 113.
L. pinnulis acutissimè bifidis, minimum. *Dill. Musc.* 488. *t.* 70. *f.* 13.

MR. HOOKER, whose authority is so great in this genus, and for whose illustration of it we have long waited, in order to write with more accuracy that part of the *Fl. Brit.*, assures us our *t.* 281 is a mere variety of *J. bidentata, t.* 606. However that may be, the present is certainly the true *bicuspidata*, a plant not uncommon in moist shady places, easily discerned by its long, cylindrical, somewhat curved sheaths, produced abundantly in the early spring.

The stems are creeping, more or less branched, clothed with two rows of small, sessile, squarish, or somewhat oblong leaves, curved upward from the ground, and each divided about half-way down, into two nearly equal, very sharp, spreading lobes. The fructification appears to be always terminal. The sheaths are curiously reticulated, their orifice with many sharp teeth, convoluted when dry. Capsule brown, on a stalk twice or thrice as long as the sheath. The colour of the whole plant, except the capsule, is nearly white, with a tawny tinge here and there.

Ehrhart's *bicuspidata*, Crypt. 292, is different from this, and very like our *t.* 281.



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JUNGERMANNIA albicans.

Whitish Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

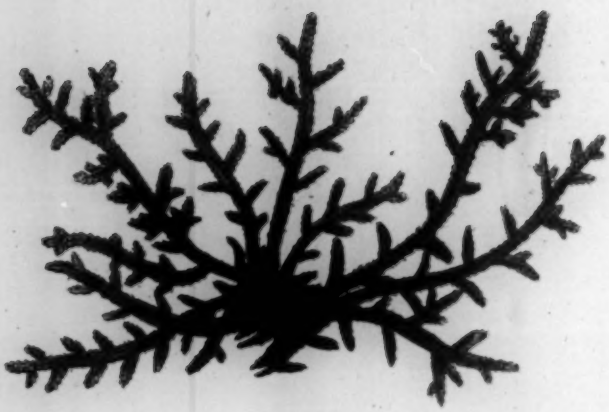
SPEC. CHAR. Stems ascending, somewhat branched. Leaves in two rows, oblong, recurved, single-ribbed; their side-lobes elliptical, imbricated. Sheaths terminal, inflated, many-toothed.

SYN. Jungermannia albicans. *Linn. Sp. Pl.* 1599. *Huds.* 513. *With.* 876. *Hull.* 279. *Lightf.* 777. *Winch. v.* 2. 27. *Ehrh. Crypt.* 87.
Lichenastrum trichomanis facie, capitulis e foliorum summitate enascentibus, minus. *Dill. in Raii Syn.* 112.
L. auriculatum, pinnulis angustis planis recurvis. *Dill. Musc.* 492. *t.* 71. *f.* 20.
Hepaticoides albescens, foliis pinnatis. *Vaill. Paris.* 100. *t.* 19. *f.* 5.

SPECIMENS of this were communicated to us by Mr. Hooker, as the only *Jungermannia* that has a rib to its leaves, and this indeed is but incomplete, vanishing about the middle, or a little beyond. Dillenius says it is abundant in woods and shady places. Our local writers, except Mr. Winch, mention it not.

The stems are an inch or two tall, sometimes tufted and upright, sometimes more lax and only ascending, though rooted only at their base, and not creeping. They are generally subdivided, and all over clothed with small leaves, of a whitish green tinged with red, imbricated in two rows, but recurved, their form oblong and obtuse, keeled, with a rib chiefly towards their bottom. Their extremities are undivided, but each bears on one side, at its base, a little elliptical side-lobe, and these being all on the same side of the stem, lie imbricated over each other in two rows. The sheaths are terminal, solitary, short and inflated, somewhat plaited, with numerous unequal marginal segments. Fruitstalk white and capillary, an inch long. Capsule brown.

A morsel of a purplish variety of this is by mistake figured in our *t.* 1023 on the left hand.



Jan.1.1818 Published by Jos. Sowerby London

JUNGERMANNIA ciliaris.

Ciliated Jungermannia.

CRYPTOGAMIA Hepaticæ.

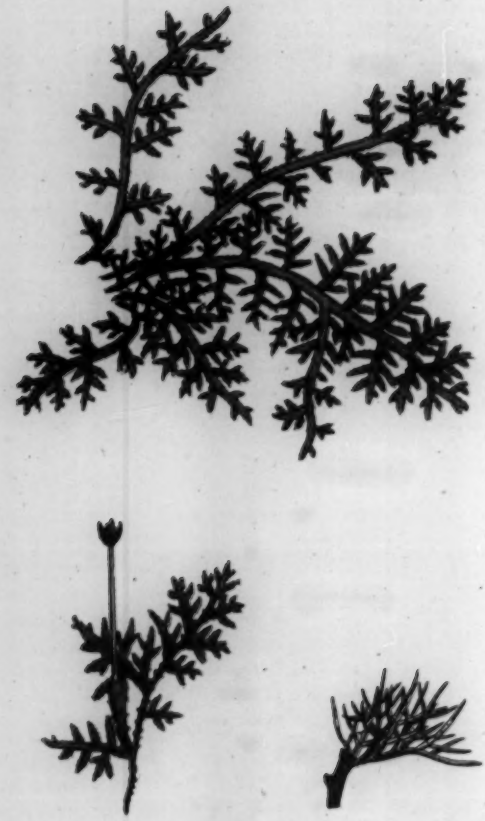
GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves. *Seeds* attached to elastic filaments.

SPEC. CHAR. Stems prostrate, pinnate. Leaves alternate, two-ranked, convex above, irregularly palmate, fringed. Sheaths cylindrical, smooth, obtuse.

SYN. Jungermannia ciliaris. *Linn. Sp. Pl.* 1601. *Dicks. Crypt. fasc.* 2. 14. *Ehrh. Crypt.* 18. *Hull.* 281.
J. pulcherrima. *Linn. Fil. Meth. Musc.* 35. *Dicks. Crypt. fasc.* 1. 7.
Lichenastrum scorpioides pulchrum villosum. *Dill. Musc.* 481. *t.* 69. *f.* 3.

MR. DICKSON first discovered this beautiful species, growing in dry heathy mountainous places in the north. Our specimens were gathered by Mr. Hooker, but the fructification, never yet observed in Britain, was taken from the Linnæan herbarium.

This is among the larger and most branching of the genus, growing prostrate in spreading patches, the stems being once or twice alternately pinnated, and leafy throughout. Leaves in two ranks, alternate, more or less closely imbricated, curved downwards, and concave beneath, convex above. Their shape is very irregular, but always more or less deeply palmate; their margin exquisitely fringed throughout with jointed hairs, or rather processes. There are most usually two principal lobes, one smaller than the other, which perhaps made Linnæus call the leaves auricled; and his son, trusting to that definition, without looking at the authentic specimen in his herbarium, was led to the strange assertion that his and Dr. Swartz's *pulcherrima* was a totally different plant; which perhaps the wrong synonym of Dillenius might confirm.—The sheaths of *J. ciliaris*, terminating the short branches, are cylindrical, obtuse, smooth and simple, irregularly jagged at their margin. Fruit-stalk scarcely an inch high. The predominant colour of the plant is a tawny or brownish green.



Jan.ry published by J.C. Sowerby London

JUNGERMANNIA tomentella.

Spongy Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

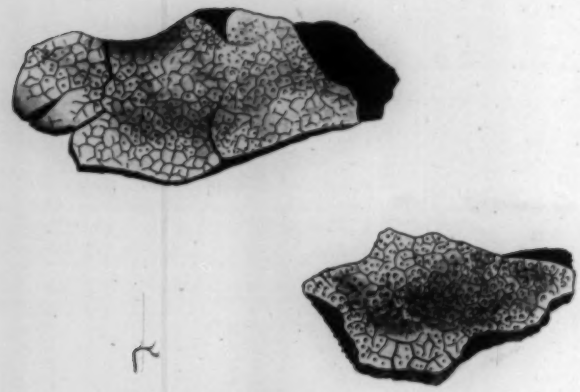
SPEC. CHAR. Stems doubly pinnate, tufted. Leaves alternate, twice compound, capillary, closely crowded. Sheaths funnel-shaped, rough.

SYN. Jungermannia tomentella. *Ehrh. Crypt.* 8. *Dicks. Crypt. fasc.* 2. 14. *Hull.* 281.
J. ciliaris. *Weis. Gott.* 129. *Huds.* 515. *With.* 880. *Winch. v.* 2. 27.
Lichenastrum filicinum crispum. *Dill. in Raii Syn.* 111.
L. filicinum pulchrum villosum. *Dill. Musc.* 503. *t.* 73. *f.* 35.

FOUND in places inundated by clear running water, chiefly in the mountainous parts of Britain. We have gathered it abundantly at Hafod, Cardiganshire, at the foot of shady dripping rocks. Mr. Hooker has communicated it from Scotland and Devonshire, and Miss Hutchins from Ireland. For the fructification we are obliged to resort to specimens sent by Schreber to Linnæus, with the proper synonym of Dillenius, which latter, having been misapplied to *J. ciliaris* in the *Species Plantarum*, led our incautious English writers astray.

The plant is pale green, several inches high, growing somewhat imbricated in light elastic tufts which hold water like a sponge, owing to the singular structure of the leaves, each of which is a bipinnate assemblage of minute jointed capillary bristles, and a double series of such leaves, crowded and partly entangled together, covers all the branches, which are themselves elegantly bipinnate. The sheaths are lateral, of a large comparative bulk, and remarkable structure, being funnel-shaped, and externally rough or minutely bristly, their margin lobed. Fruitstalk in our specimens not above twice or thrice the length of the sheath. Dillenius delineates them and the capsules much larger than we have seen either.

Ehrhart's specific name, such as it is, is most commodiously made into an adjective.



Pub. 1811 published by Jas. Sowerby London.

LICHEN microsticticus.

Little-dotted Lichen.

CRYPTOGAMIA Algæ.

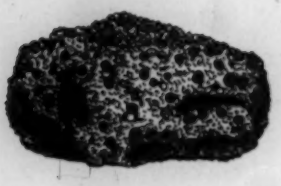
GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crustaceous, cracked, warty, cream-coloured, with a thin, smooth, white, evanescent edge. Tubercles minute, black, with a sooty uneven border.

SYN. Lichen punctatus. *Dicks. Crypt. fasc.* 3. 15. *With. v.* 4. 19.—See *Winch v.* 2. 47. *n.* 1301.

WE gathered this on slate rocks on the hills about Hafod, Cardiganshire, and have received it from the Rev. Dr. Stuart and others, as well as from Mr. Dickson for his real *L. punctatus*, for which we have mistaken a wrong plant in *v.* 7. *t.* 450. To this latter perhaps the figure in *Fl. Dan. t.* 468. *f.* 2, may belong; certainly not to this present species.

We venture to go counter to the opinion of the great Dr. Acharius, who considers this as one form of *L. Westringii*, *t.* 2204; but our motive is chiefly to make this production known, and to invite discussion; not by any means to assert dogmatically what we cannot prove. The crust spreads over rocks in a thin, continued, though cracked, form, and is remarkable for the peculiar tenuity of its very smooth edge, which is evanescent, not limited, much less bordered with any dark colour. The general surface of the crust is cream-coloured, turning brownish by keeping, besprinkled with minute *papillæ* or warts, which indeed betray an analogy, but not necessarily an identity, with the genus *Isidium*. Very minute tubercles are scattered over the surface, whose disk is rather convex, their border uneven and of a still more opaque and intense black than the disk. The question is whether these be the real fructification of the crust, as we believe; or parasitical productions, as in *L. gelasinatus* of Withering. They certainly have no connexion with the fructification of *L. Westringii*. There being already more than one *L. punctatus*, we have chosen a new synonymous appellation.



Pl. 1111 published by Jas Sowerby London.

LICHEN pruinosus.

Frosty-shielded Lichen.

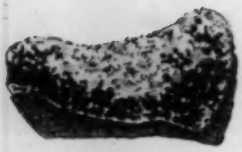
CRYPTOGAMIA Algæ.

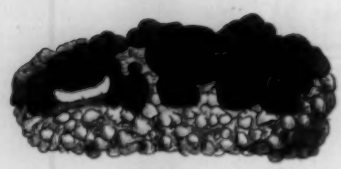
GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust leprous, thin, scattered, greyish-white. Shields slightly convex, irregularly shaped, rusty-black, with a grey bloom when dry, and a thin, black, smooth border.

SYN. Lichen pruinosus. *Ach. Prod.* 77.
L. pruinatus. *Dicks. Crypt. fasc.* 3. 15. *t.* 9. *f.* 4. *With. v.* 4. 20. *Hull.* 290.
Lecidea pruinosa. *Ach. Meth.* 55. *Winch. v.* 2. 35.

GATHERED on a limestone wall near Gainford, Durham, by the Rev. Mr. Harriman, and communicated to us by Mr. Winch, who justly observes that the "crust is white or ash-coloured," not reddish nor rusty, except probably from the action of some animal matter falling upon it. The substance is very thin, leprous and dispersed, inseparable from the stone. Shields variously scattered, often clustered, sessile, rather depressed, various in size and shape; their disk somewhat convex; when wet of a rusty brown, redder within; when dry black, with a peculiar grey bloom, like that of a plum. Their border is thin, smooth, entire and black. It is a rare species, not generally known to botanists, either in this country or abroad.





Published by Jas. Sowerby, London.

LICHEN rupestris.

Orange Rock Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust thin, dispersed, greenish grey. Shields sunk, flat, bordered; at length convex, smooth, deprived of their border, reddish orange-coloured.

SYN. Lichen rupestris. *Ach. Prod.* 43.
Lecidea rupestris. *Ach. Meth.* 70. *Winch. v.* 2. 39.
Verrucaria rufescens. *Hoffm. Pl. Lich. v.* 1. 80. *t.* 17. *f.* 1.

COMMUNICATED from walls at Beamish, Durham, by Mr. Winch, who assures us his specimen has been compared with some from Dr. Acharius. If the greenish or greyish interrupted and often evanescent crust, drawn in our plate, really belongs to the shields, which from Hoffmann's own specimen, as well as his and Acharius's description, we dare not deny, this species is abundantly distinct from *L. calvus*, *t.* 948, whose crust is white, continued, hard and firm; but we have specimens of the latter overrun with something exactly similar to Hoffmann's plant at least, and we scarcely know where to draw the line. Certainly, however, in the plant before us there is no trace of the proper crust of *calvus*. The shields when young are sessile or immersed, nearly flat, of a deep orange, with a border of the same colour, which disappears by age, and the disk becomes almost globular, exactly like the advanced state of *calvus*, *t.* 948, but of rather a more vivid hue; whereas the young shields of the latter are depressed, pitted, and irregular, with scarcely any proper border, and of a paler orange than in *rupestris*.

Scopoli's *rupestris* is by far too vague and comprehensive to be hazarded as a synonym, and the figure in *Fl. Dan. t.* 825, *f.* 2, has very little likeness to any thing with which we are acquainted.

Pubd as the Act directs by G. Smeeton London

LICHEN heteromallus.

Black Plush Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Minutely shrubby, densely tufted, erect, entangled, cylindrical, corymbose, black, with palish notched tips.

GATHERED by Mr. Sowerby, 10 or 12 years ago, in the autumn, growing in cracks of the bark of old elms in Hainault forest. We cannot find any characters suitable to it in Acharius, to whose genus of *Cornicularia* it undoubtedly belongs.

The fronds form wide dense black patches, from a quarter to half an inch thick, harsh and rigid, but not brittle, when dry; soft, elastic, and spongy when wet. Each is repeatedly branched, from a slender base, in a corymbose manner, upwards, so as to make a level surface at the top. The colour is a deep olive black, rather shining, paler here and there, especially at the tips, which however are often quite black, and the whole, standing upright, are entangled laterally by their branches, so as to compose something like coarse velvet or plush. No shields are discoverable.

At first sight this plant resembles *L. muscicola*, Ach. Prod. 215, but under a magnifier its position and ramifications are found totally different.

Pubd. 1.1811 published by Jas. Sowerby London

CHENOPODIUM botryodes.

Many-clustered Goosefoot.

PENTANDRIA Digynia.

GEN. CHAR. *Cal.* 5-cleft, inferior. *Cor.* none. *Seed* 1, lenticular, invested with the closed five-sided calyx.

SPEC. CHAR. Leaves triangular, somewhat toothed; the upper ones bluntish. Clusters upright, compound, rounded, leafy.

WE are obliged to the accurate Mr. Wigg for pointing out this plant to us, in waste ground where the soil is moist and sandy, near Yarmouth, and we have gathered the same between the cliff and the sea at Lowestoft, flowering in autumn.

The root is annual. Herb most akin to *C. rubrum*, *t.* 1721, but the leaves are very much smaller, and not rhomboid, or very slightly so, neither are they so much toothed; the upper ones are most blunt, their edges somewhat revolute or reflexed; all of a fleshy texture, smooth, frequently red. The clusters of flowers and seed are peculiarly abundant and rounded, often red, growing on upright leafy branches. Calyx tumid and blunt. Seed small, black and shining.

The *Blito Pes anserinus dicto similis*, Raii Syn. 154, *n.* 4, being found in Oxfordshire, can scarcely agree with this, which is a maritime species, and we would rather let that remain as a variety of *C. rubrum*, at least till an authentic specimen comes in our way.

Feb.1 1811 published by Jas Sowerby London.

ULMUS glabra.

Smooth-leaved, or Wych Elm.

PENTANDRIA Digynia.

GEN. CHAR. *Cal.* 4- or 5-cleft, inferior, permanent. *Cor.* none. *Capsule* membranous, compressed, nearly flat, with 1 *seed.*

SPEC. CHAR. Leaves doubly serrated, unequal at the base, smooth. Flowers nearly sessile, five-cleft. Fruit obovate, naked, cloven.

SYN. Ulmus glabra. *Mill. Dict. ed.* 8. *n.* 4. *Cullum. Ang. Fl.* 97.

U. montana β. *Sm. Fl. Brit.* 282. *var.* 2. *Hull. ed.* 2. 75.

U. folio glabro. *Ger. em.* 1481. *Raii Syn.* 469.

U. campestris var. 3. *With.* 279. *Hull.* 57.

MR. EDWARD FORSTER, so accurately attentive to the botany of his own country, has procured us specimens of this Elm, which he says is the most abundant species in some parts of Essex. We had the flowers in March, the fruit in May, and the leaves in the end of June.

This is an elegant tree, with spreading drooping branches, whose bark is smooth and blackish. The leaves are more oblong and more rigid than in *U. suberosa*, *t.* 2161, very unequal at the base, quite smooth to the touch above, and nearly so beneath, except that the rib and veins are there more or less downy, like other species. The flowers are nearly sessile, fringed, 5-cleft, and the fruit small, obovate, cloven at the top, often reddish. Goodyer in Gerarde's Herbal says the wood is preferred for the naves of cart-wheels.—Mr. Forster is of opinion that our *campestris*, *t.* 1886, is the *U. minor, folio angusto scabro*, of Goodyer and Ray, and very little known out of Norfolk, our *suberosa*, *t.* 2161, being *U. vulgatissima, folio lato scabro*, of those writers. If so, our Norfolk Elm is well worthy of cultivation in other counties for its hard and durable wood.

Pubd as the act directs by Jas Sowerby London

MEUM athamanticum.

Spignel, Meu, or Bald-money.

PENTANDRIA Digynia.

GEN. CHAR. *Fruit* elliptic-oblong, with 3 ribs on each side. *Involucrum* somewhat cut; the general one often abortive; the partial halved. *Petals* inflexed, entire. *Calyx* obsolete.

SPEC. CHAR. Leaflets all in numerous, deep, bristle-like segments.

SYN. Meum athamanticum. *Jacq. Austr. v. 4. 2. t. 303. Sm. Fl. Brit. 308. Hull. ed. 2. 81.*
Meum. *Raii Syn. 207. Ger. em. 1052.*
Athamanta Meum. *Linn. Sp. Pl. 353. Huds. 116. Dicks. H. Sicc. fasc. 11. 7.*
Æthusa Meum. *Linn. Syst. Veg. ed. 14. 287. With. 305.*

NATIVE of mountainous pastures in Westmoreland, Lancashire, the north of Yorkshire, and Merionethshire, as well as in Scotland, from which last country Lady Wilson favoured us with this specimen. It flowers in May.

The root is perennial, thick and woody, very aromatic, crowned with the fibrous remains of old leafstalks. Stem but little branched, about a span high when in blossom, but twice as tall in seed. Leaves dark green, doubly pinnate, their segments numerous and singularly delicate, smooth. Footstalks dilated into a broad, concave, ribbed stipula. Flowers numerous, uniform, cream-coloured, or reddish. General involucrum of a few linear or lanceolate leaves, mostly 3-cleft, often wanting; partial of rather more, either entire or cut. Calyx scarcely discernible. Fruit slightly compressed, with 3 acute ribs to each side. Possibly this plant, about whose genus there have been such various opinions, might without violence be referred to *Ligusticum*.

Miss Watson, of Delvine house, Angusshire, has informed Mr. Sowerby that where this herb abounds in the Highlands, the milk and butter partake of its peculiar melilot-like taste in the spring; and that a pretty strong infusion of it gives cheese the flavour of the Swiss *Chapziegar*, so as hardly to be distinguished from that brought from abroad. As the *Meum* disappears wherever the land has been ploughed, it daily grows more scarce in Scotland.

Pl. 2250 published by Jas. Sowerby London

HYPNUM rugosum.

Yellow Wolf's-claw Feather-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* ovate-oblong, from a lateral scaly sheath. *Outer fringe* of 16 teeth, dilated at the base: *inner* a variously-toothed membrane. *Veil* smooth.

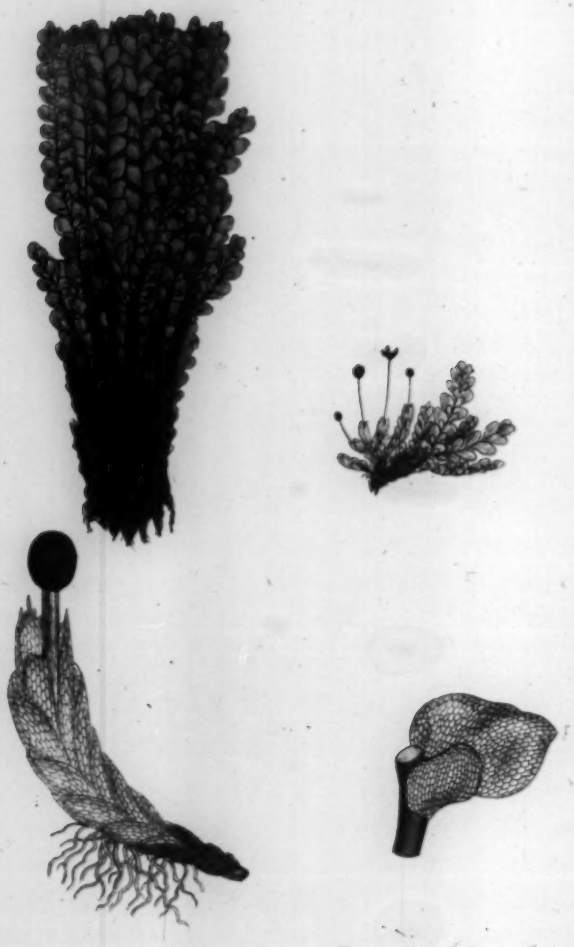
SPEC. CHAR. Stem procumbent, somewhat pinnate. Leaves folded, keeled, falcate, twisted, furrowed, pointed, single-ribbed. Lid conical.

SYN. Hypnum rugosum. *Linn. Mant.* 131. *Sm. Fl. Brit.* 1325. *Dicks. Crypt. fasc.* 2. 12. *H. Sicc. fasc.* 1. 23. *With.* 856. *Hull.* 271. *Winch. v.* 1. 111. *Swartz. Musc. Suec.* 57.

H. lutescens crispum, Lycopodii facie. *Dill. Musc.* 289. *t.* 37. *f.* 24.

WATERY places about Loch Rannoch, Perthshire, a celebrated spot for botany, first afforded Mr. Dickson the present *Hypnum*, which Dillenius knew in Germany only, and for which Hedwig, Ehrhart, and many of less note, have mistaken a different moss, whose leaves are transversely corrugated, not known in Britain. Mr. Winch has favoured us with the true *rugosum*, from Prestwick Car in Northumberland.

The stems are procumbent, imperfectly pinnate, leafy, the branches upright, obtuse, slightly hooked. Leaves of a yellow or tawny green, rusty or black with age, closely imbricated, strongly curved to one side, and in some degree twisted. They are lanceolate, entire, with a long taper point, compressed, keeled, single-ribbed throughout, furrowed lengthwise, when dry, but not across. Sheaths close, of shorter broader leaves. Fruitstalk two inches long, erect, dark purple. Capsule inclining, a little curved, cylindrical, ovate at the base, dilated at the mouth. Lid conical, short, acute.



Published by J. Sowerby, London.

JUNGERMANNIA undulata.

Wavy-leaved Jungermannia.

CRYPTOGAMIA Hepaticæ.

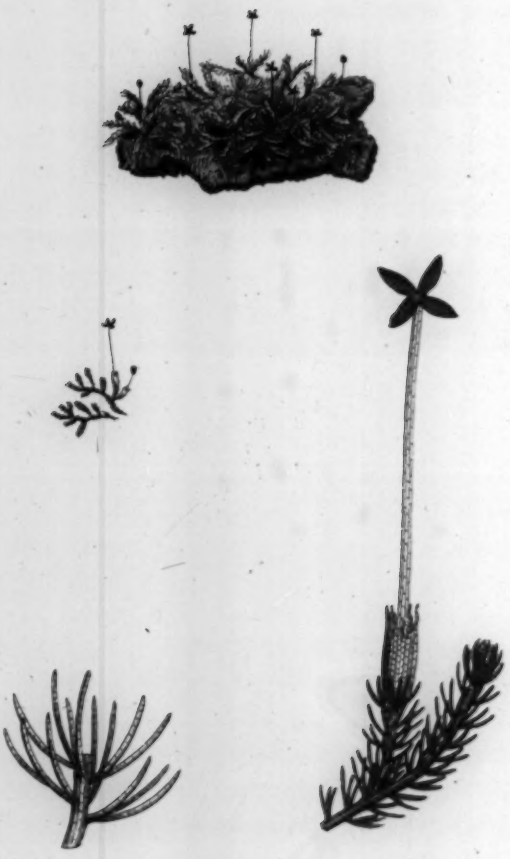
GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stems ascending, branched. Leaves in two rows, rounded, wavy, entire; their side-lobes rhomboid. Sheaths terminal, torn.

SYN. Jungermannia undulata. *Linn. Sp. Pl.* 1598. *Huds.* 512. *With.* 875. *Hull.* 279. *Lightf.* 776.
Lichenastrum pinnis auriculatis majoribus et non crenatis. *Dill. Musc.* 490. *t.* 71. *f.* 17.

A NATIVE of shady woods, where it composes dense elastic tufts about the roots of trees. Mr. Hooker gave us these specimens, which are certainly the plant of Dillenius, on which Linnæus originally founded this species, without seeing it. What he subsequently procured and described in his *Syst. Veg.* is of no moment. There is no specimen in his herbarium. He says his agreed with the figure of Vaillant, (*t.* 19. *f.* 6,) better than with that of Dillenius; but the former is of no authority, nor can we refer it with certainty to any thing.

The colour of our plant is much tinged with purple or brown, as Dillenius mentions. The stems are two or three inches high, moderately branched. Leaves alternate, in two ranks, not much crowded, of a roundish somewhat rhomboid figure, bluntly pointed, wavy, and occasionally very slightly lobed, their margin entire, in which they differ from *nemorosa*, *t.* 607, as well as in being more flaccid. The *lobulus*, or side-lobe, of each is rhomboid, folded close to the stem, which it partly covers, all on one side. Sheaths terminal, solitary, cylindrical, unequally sharply toothed and torn. Fruitstalk about an inch long, white and delicate.



Published by G. & S. Nicol, London.

JUNGERMANNIA trichophylla.

Hairy Jungermannia.

CRYPTOGAMIA Hepaticæ.

GEN. CHAR. Male flowers sessile.
Capsule on a stalk rising from a sheath, of 4 valves.
Seeds attached to elastic filaments.

SPEC. CHAR. Stem branched, creeping. Leaves imbricated every way, capillary, acute, ternate. Sheaths terminal, cylindrical, with many capillary teeth.

SYN. Jungermannia trichophylla. *Linn. Sp. Pl.* 1601. *Huds.* 516. *With.* 882. *Hull.* 281.
J. sertularioides. *Linn. Suppl.* 449. *Meth. Musc.* 35. *t.* 1. *f.* 6.
Lichenastrum trichodes minimum, in extremitate florens. *Dill. Musc.* 505. *t.* 73. *f.* 37.

FOUND on moist heathy mountainous places, in the North of England and Highlands of Scotland; communicated by Mr. Hooker.

The stems are long and capillary, much branched, growing entangled among mosses, from which they are discernible by their lighter colour, as well as by a mucor-like appearance caused by their minute pale capillary leaves. The latter are imbricated every way, but stand three together, of equal length, moderately spreading, acute, finely jointed. Sheaths terminal, much longer than the leaves, solitary, cylindrical, or slightly inflated, pale, reticulated, their edge fringed with many, erect, very slender teeth. Fruitstalk half an inch long, excessively slender and delicate. Capsule of a chesnut brown, with pointed valves.

Marianne published by Jas Sowerby Londo

POTAMOGETON gramineum.

Grassy Pondweed.

TETRANDRIA Tetragynia.

GEN. CHAR. *Cal.* none. *Petals* 4. *Style* none. *Seeds* 4.

SPEC. CHAR. Leaves linear-lanceolate, alternate, sessile, broader than their stipula. Stem round, somewhat forked.

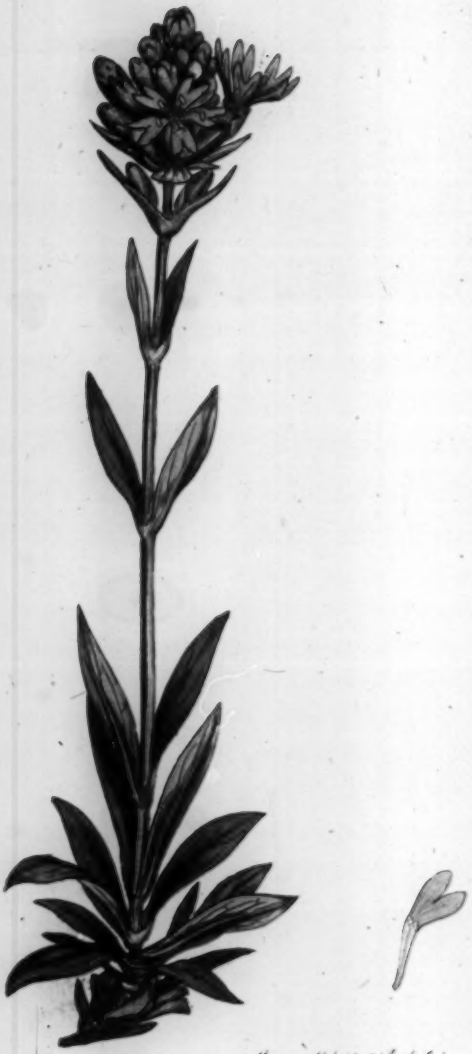
SYN. Potamogeton gramineum. *Linn. Sp. Pl.* 184. *Sm. Fl. Brit.* 196. *Huds.* 76. *With.* 214. *Hull. ed.* 2. 49.

P. gramineum latiusculum, foliis et ramificationibus densissimè stipatis. *Dill. in Raii Syn.* 149. *t.* 4. *f.* 3.

DILLENIUS mentions this as growing in ditches, near Deptford. We have a specimen from Mr. Rose's herbarium. That in our plate was gathered near Beverley, Yorkshire, by the late Mr. R. Teesdale. It is a species which few botanists seem to have ascertained, but we can see no obscurity about it.

The whole herb grows under water, except the spikes, which in July rise above the surface. The root is perennial. Stem slender, round, zigzag, much branched, and partly forked. Leaves grassy, alternate, except at the forks, spreading, crowded, linear, bluntish, entire. Stipulas rolled inwards cylindrically, and thence most of them, at least in the lower part of the stem, narrower than the leaves, all pale brown or whitish. Spikes ovate, dense, solitary, of few flowers, from the forks of the stem, except some of the upper ones, each standing on a swelling stalk of its own length.

Lightfoot justly complains that the plate of Dillenius in Ray's *Synopsis* wants the stipulas, but his own *P. gramineum* is not this plant. We have ventured to cite it, and the figure in *Fl. Dan. t.* 222, which he commends, as one state of our *heterophyllum*, *t.* 1285.



May 1 1811 published by J.C. Sowerby London

LYCHNIS alpina.

Red Alpine Campion.

DECANDRIA Pentagynia.

GEN. CHAR. *Cal.* of 1 leaf, oblong. *Petals* 5, with claws; their limb mostly divided. *Caps.* superior, opening with 5 teeth, of 1 or 5 cells.

SPEC. CHAR. Smooth. Petals cloven. Flowers corymbose. Leaves linear-lanceolate.

SYN. Lychnis alpina. *Linn. Sp. Pl.* 626. *Sm. Tr. of Linn. Soc. v.* 10. 342. *Fl. Dan. t.* 65. *Willd. Sp. Pl. v.* 2. 809. *Curt. Mag. t.* 394.

Silene Lapponica alpina, facie viscariæ. *Linn. Fl. Lapp. n.* 185.

AS this pretty *Lychnis* is a native of the Lapland as well as the Swiss alps, it is rather a wonder that it has not long ago been found in our island. Mr. G. Don however first made this interesting discovery, on rocks near the summit of Clova mountains in Angusshire, in 1795. The plant is there very scarce, being only found, any where, on the most elevated spots. It is perennial, flowering in June or July. We have preferred drawing Mr. Don's original specimen, though dry, to any garden one; but we have compared it with such, and with other dried specimens from Switzerland.

This species most resembles *L. Viscaria, t.* 788, from which Linnæus, while travelling in Lapland, was at some pains to distinguish it. The present is much smaller, and not viscid, besides the essential difference of its half-divided petals. The styles are certainly five, and the petals each crowned with a cloven tooth, notwithstanding the various and contradictory accounts in the works of Linnæus, Haller, and others, the history of which, much too long for this place, is given in the Transactions of the Linnæan Society, above quoted.—The Botanical Magazine and *Hort. Kew.* copy *Syst. Veg.* ed. 14, apparently without their authors being aware of the above confusion, nor does the description or figure in the former throw any light upon the subject.

Marianne published by J.C. Sowerby London.

EUPHORBIA Lathyris.

Caper Spurge.

DODECANDRIA Trigynia.

GEN. CHAR. *Cal.* of 1 leaf, inflated, inferior. *Nectaries* 4 or 5, standing on the calyx. *Caps.* stalked, 3-lobed.

SPEC. CHAR. Umbel of four branches, repeatedly forked. Leaves opposite, sessile, entire; heart-shaped at the base.

SYN. Euphorbia Lathyris. *Linn. Sp. Pl.* 655. *Turn. & Dillw. Guide,* 27. *Ait. Hort. Kew. v.* 2. 140. *Sm. Prod. Fl. Græc. v.* 1. 326. *Bulliard. Fr. t.* 103.

Lathyris. *Camer. Epit.* 968. *Fuchs. Hist.* 455. *Ger. em.* 503.

SENT last July from Berkshire by the Rev. Dr. Beeke, on whose authority it is said, in The Botanist's Guide, to be "certainly wild, and perhaps indigenous, in several places in and near the parish of Ufton near Reading, springing up in dry stony thickets, periodically for a year or two after they have been cut, and till choked by briars, &c."

The root is biennial, with numerous strong spreading fibres. Herb of a dark but glaucous green. Stem solitary, two to four feet high, erect, round, hollow, beset with numerous oblong sessile entire spreading opposite leaves, crossing each other in pairs, heartshaped at the base. Four great branches compose the umbel, each of which is repeatedly forked, and so large that we can exhibit only a part of one. General and partial involucrums heartshaped, pointed. Flowers pale yellow, with tinges of purple about them and their stalks. Capsules large, smooth. The latter are called Capers by cottagers, and, as we have heard, are sometimes pickled for such, though when recent abounding with a virulent milky juice; but the real Caper, *Capparis,* when fresh, is perhaps not less acrid or poisonous, like other vegetables used for pickling, which the vinegar renders eatable at least, if not wholesome. We cannot recommend a trial of this Spurge on our own knowledge; and should be very loth to venture upon it.

Moore sculpt. published by Jas. Sowerby Decr. 1.

CENTAUREA Isnardi.

Jersey Star-thistle.

SYNGENESIA Polygamia-frustranea.

GEN. CHAR. *Recept.* bristly. *Seed-down* simple. *Corollæ* of the radius funnel-shaped, irregular, longer than those of the disk.

SPEC. CHAR. Scales of the calyx palmate and spinous. Leaves toothed in a lyrate manner, roughish, slightly clasping the stem. Flowers sessile, terminal.

SYN. Centaurea Isnardi. *Linn. Sp. Pl.* 1295. *Sm. Fl. Brit.* 912. *Dicks. H. Sicc. fasc.* 16. 10. *Hull. ed.* 2. 247.

Calcitrapoides procumbens, cichorii folio, flore purpurascente. *Isnard. Mem. de l'Acad. des Sciences for* 1719: *German edition,* 378. *t.* 19.

NO part of the British dominions is known to produce this plant, except the isle of Jersey, from whence it was sent to Mr. Dickson, who has kindly communicated, last autumn, from his garden, a specimen differing in no respect from wild ones.

This is the only British *Centaurea* whose calyx-spines are simply palmate, not compound. The root is perennial. Stems procumbent, branched, leafy, angular, furrowed, roughish. Leaves scattered, oblong, more or less deeply pinnatifid in a lyrate manner, their lobes tipped with spines, their margins, or both surfaces frequently, rough with short rigid hairs. The upper leaves are lanceolate and nearly entire, several of them placed about the base of the terminal solitary flowers. Calyx ovate, smooth and naked, except the spreading five-cleft thorns of each scale. Corolla pale purple, with darker anthers. Mr. J. D. Sowerby has found the filaments contract when the anthers are touched, as related by many authors concerning *C. Calcitrapa, t.* 125.

Macrae published by J. & J. Sowerby, London.

ASPLENIUM viride.

Green Maidenhair Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in scattered lines. *Involucrum* originating laterally from a vein, and bursting inwardly.

SPEC. CHAR. Frond pinnate; leaflets alternate, roundish-elliptic, crenate. Common stalk flattened beneath.

SYN. Asplenium viride. *Huds.* 453. *Sm. Fl. Brit.* 1127. *With.* 768. *Hull.* 241. *Dicks. H. Sicc. fasc.* 3. 18. *Lightf.* 663. *Winch. v.* 1. 97. *Bolt. Fil.* 24. *t.* 14. *Ehrh. Crypt.* 71.

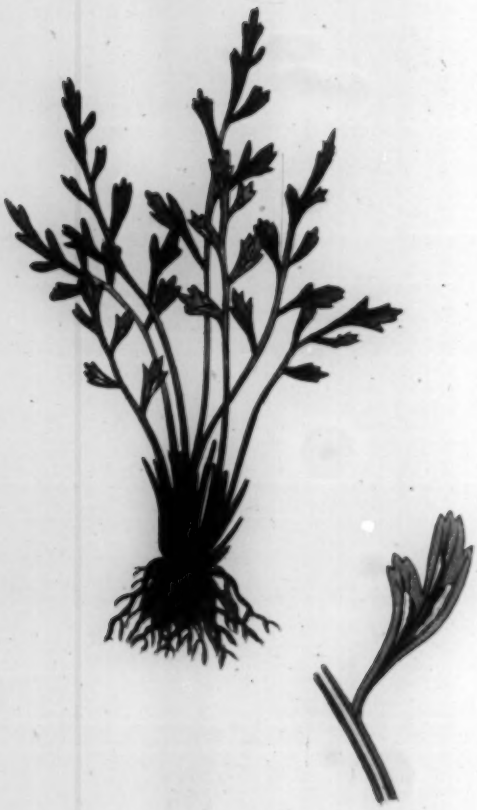
β. A. Trichomanes-ramosum. *Linn. Sp. Pl.* 1541. *Bolt. Fil.* 25. *t.* 2. *f.* 3.

Trichomanes ramosum. *Bauh. Hist. v.* 3. 747. *Raii Syn. ed.* 2. 46. *ed.* 3. 119.

T. minus et tenerius. *Moris. sect.* 14. *t.* 3. *f.* 11.

FOUND on rocky mountains in Wales, Scotland, and the north of England. We have received wild specimens from Mr. Griffith and the Rev. T. Gisborne. It seems generally to prefer granite to calcareous rocks.

The present fern differs from *A. Trichomanes, t.* 576, in its paler green colour, with more yellowness in the fructification; but more essentially in the green midrib, which is flattened underneath, so as to be square, and in the alternate situation of the leaflets, whose base is besides more wedge-shaped. Sometimes the frond is divided, as in our *fig.* 2, and in this state the plant was first described, Linnæus adopting it from the older authors; but we much prefer Hudson's name to that of a mere variety. Mr. Lhwyd appears to have been one of the first British botanists who knew, and well defined, this species and its occasional variety. He described it "*Trichomanes* with a green rib, sometimes divided, and lenticular crenate leaves," before he knew that any author had noticed it.



ASPLENIUM alternifolium.

Alternate-leaved Spleenwort.

CRYPTOGAMIA Filices.

GEN. CHAR. *Fructif.* in scattered lines. *Involucrum* originating laterally from a vein and bursting inwardly.

SPEC. CHAR. Frond pinnate; leaflets alternate, wedge-shaped, erect, jagged at the extremity.

SYN. Asplenium alternifolium. *Jacq. Misc. v.* 2. 51. *t.* 5. *f.* 2. *Dicks. Tr. of Linn. Soc. v.* 2. 290. *Sm. Fl. Brit.* 1130. *With.* 768. *Hull.* 241.

A. germanicum. *Weis. Gott.* 299. *Ehrh. Crypt.* 43.

Scolopendrium alternifolium. *Roth. Germ. v.* 3. 53.

Adiantum novum germanicum, rutæ murariæ facie. *Breyn. Cent.* 1. 97.

OUR good friend Mr. Dickson, whose discoveries have undoubtedly more copiously enriched the British Flora, than those of any other person since the days of Ray and Dillenius, favoured us with this specimen, gathered by himself on sunny rocks in the south of Scotland, about two miles from Kelso, on the Tweed. We are not aware that any other person in Britain has noticed the plant.

This is, as it were, an intermediate species between *A. septentrionale, t.* 1017, and *A. Ruta muraria, t.* 150, but quite distinct from both. The lanceolate form of the frond taken collectively, its brighter colour, and the numerous simply alternate leaflets, gradually smaller as they are nearest the point, are its clear characteristics. The figure of each leaflet is a narrow wedge-shape, jagged at the top, sometimes deeply divided, and very rarely indeed the lowermost is compound. The lines of fructification are short and pale.

Mar 1 1821 published by Jas Sowerby London

PHASCUM curvisetum.

Short bent-stalked Earth-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Capsule* ovate, without any separate lid, deciduous. *Veil* minute, deciduous.

SPEC. CHAR. Stem very short, nearly simple. Leaves oblong, hair-pointed. Capsule globose. Fruit-stalk very short, bent.

SYN. Phascum curvisetum. *Dicks. Crypt. fasc.* 4. 2. *t.* 10. *f.* 4. *Sm. Fl. Brit.* 1154. *Turn. Musc. Hib.* 3.

FOUND by Mr. Dickson in cultivated ground near Croydon, Surrey, in the early spring. The Rev. Dr. Abbot informs us he has gathered the same near Bedford.

The little short stems, sometimes, though rarely, divided, grow in tufts, overtopped by their crowded, ovate-oblong, concave, entire leaves, which stand almost upright, and have each a keel formed by a mid-rib, terminating in a short hair. Fruitstalks terminal, solitary, very short, and soon bent to one side with an angle. Capsule globose with something of a point, smooth, red brown, not rising so high as the leaves, but turned to one side. The veil is whitish, deeply torn, soon cast off, as in others of the genus, because of its own narrow dimensions, and the very tumid capsule.

This is nearly related to *P. cuspidatum*, *t.* 2025, and still more nearly perhaps to *Schreberianum*, *t.* 2026, but we believe all the three to be distinct.

Moss as published by Jos. Sowerby London.

DICRANUM undulatum.

Waved Clustered Fork-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem branched. Leaves slightly curved to one side, ovato-lanceolate, waved, with a long serrated point. Fruitstalks several from each sheath.

SYN. Dicranum undulatum. *Schrad. Spicil.* 59. *Sm. Fl. Brit.* 1203. *Ehrh. Crypt.* 271. *Roth. Germ. v.* 3. 167. *Turn. Musc. Hib.* 59. *Winch. v.* 1. 101.

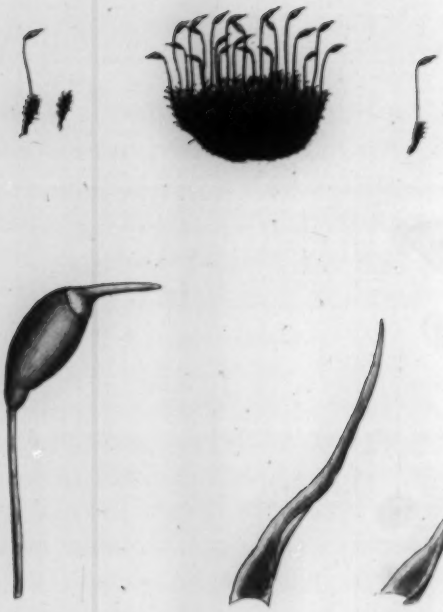
D. polysetum. *Swartz. Musc. Suec.* 34 *and* 87. *t.* 3. *f.* 5.

Muscus capillaceus, foliis pallidis, pedunculis pluribus e communi thecâ egredientibus. *Buxb. Cent.* 2. 8. *t.* 4. *f.* 1.

A NATIVE of alpine woods and turfy bogs, bearing fruit in July. Mr. Templeton sent it from Ireland, and Mr. Winch from Durham.

This differs from the common *D. scoparium*, *t.* 354, somewhat, though not much, in size, as also in its paler and tawny hue; but still more materially in its leaves being but very slightly curved to one side, and more or less undulated transversely, especially when dry, as well as tipped with a triangular, serrated or toothed point. The fruitstalks are two or more, sometimes four, from one common sheath. Capsules cylindrical, curved, smooth. Lid bristle-shaped, rather longer than the capsule.—In many of these marks the moss before us agrees with *D. majus*, *t.* 1409, which in its smooth and curved leaves rather resembles *scoparium*. Linnæus, Hedwig, Haller, Dillenius, and recently Mohr, have supposed them all one species, but we can scarcely assent to this opinion.

The fruitstalks, when so many as seven or eight grow together, though apparently proceeding from one sheath, as mentioned in *Fl. Brit.*, will be found to have two close together.



Hooper published by J. & C. Bradley, London.

DICRANUM uncinatum.

Hooked Fork-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem mostly simple. Leaves bristle-shaped, keeled, ribless, curved to one side. Capsule drooping, with a lateral tumour at its base.

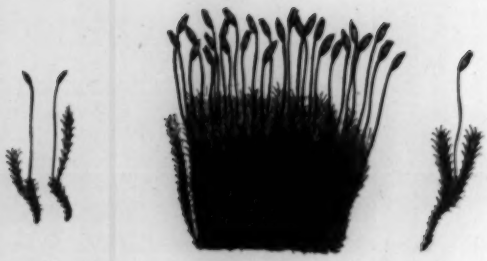
SYN. Dicranum flavidum. *Swartz. Mss.*

Bryum uncinatum. *Dicks. Crypt. fasc.* 4. 11. *t.* 11. *f.* 8.

COMMUNICATED by Mr. Dickson, who discovered this species on the naked turfy soil of some of the Highland mountains of Scotland, nor do we know of its having been found by any other person in Britain. Dr. Swartz sent specimens of the same in 1805, of which our large tuft consists, under the apt name of *D. flavidum*; but the above was first established.

The stems vary in height, and according to Mr. Dickson are sometimes nearly an inch tall. Hence we judge them to be perennial. Leaves light green, curved more or less to one side, tapering and slender-pointed, entire, keeled, but without a rib; broad at their base. Fruitstalk terminal, solitary, half an inch high, slender, pale yellow, at length wavy. Capsule inclining, rather pear-shaped, curved, smooth, tawny yellow, with a small swelling on one side at its base. Lid awlshaped, inflexed, as long or longer than the capsule. Fringe not seen by us, but described by Mr. Dickson as composed of inflexed cloven teeth, which stamps the generic character, confirmed by Dr. Swartz.

A comparison with *t.* 1151 will show how this moss differs from *D. crispum*, which it in many points resembles.



2.

Nov 1 1811 published by J.S. Sowerby London

DICRANUM purpureum.

Purple-stalked Fork-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem forked. Leaves lanceolate; twisted when dry. Capsule elliptical, at length deeply furrowed. Lid conical.

SYN. Dicranum purpureum. *Hedw. Sp. Musc.* 136. *t.* 36. *Sm. Fl. Brit.* 1217. *Sibth.* 281. *Turn. Musc. Hib.* 72. *Winch. v.* 1. 103.

Bryum purpureum. *Huds.* 482. *Hull.* 254.

B. tenue stellatum, setis purpureis. *Dill. Musc.* 386. *t.* 49. *f.* 51.

B. perangustis foliis et cauliculis, foliis crebrioribus et circa summitates magis congestis, capitulis erectis e surculis annotinis egredientibus, pediculis purpureis. *Raii Syn.* 99.

Mnium purpureum. *Linn. Sp. Pl.* 1575. *With.* 802. *Relh.* 417. *Abbot.* 233.

β. Bryum tenue. *Dicks. Crypt. fasc.* 3. 8. *With.* 828. *Hull.* 262; but not of Weber.

B. purpureum β. *Huds.* 482; excluding synonyms.

TOPS of walls, gravelly heaths and banks, or rotten wood, glow in the spring with the copious crimson stalks of this very common moss, whose stems are perennial, not annual, and are forked, tufted, and clothed with bright green, spreading, ovato-lanceolate, entire, acute, but not bearded, leaves. These have each a strong mid-rib, and their lower part is slightly revolute. By drying they become twisted. Fruitstalks solitary, mostly from the forks between the young shoots, an inch high, very beautiful and shining, sheathed at the base. Capsule nearly erect, elliptical, shining, at first even, but by drying or age becoming marked with a few very deep furrows, when also the base is contracted. Lid conical, oblique, one fourth as long as the capsule. Teeth red, cloven beyond their middle.

Bryum tenue, communicated by Mr. Dickson, appears to us a small or starved variety; see *fig.* 2.

Mintern Bros. lith.

DICRANUM flavescens.

Yellowish Fork-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem erect, somewhat branched. Leaves linear-lanceolate, wavy when dry. Capsule turbinate, erect, smooth.

SYN. Dicranum flavescens. *Sm. Fl. Brit.* 1224. *Turn. Musc. Hib.* 70.

Bryum flavescens. *Dicks. Crypt. fasc.* 2. 4. *t.* 4. *f.* 5. *With.* 830. *Hull.* 254.

FOUND in alpine marshy places in Scotland, according to Mr. Dickson, who favoured us with a specimen. Mr. Turner mentions its growing on rocks wet with running water in Ireland. We find no mention of this species among foreign writers, for the *B. flavescens* of Scopoli, *Fl. Carn. n.* 1305. *t.* 62, most assuredly different, appears to be our *Tortula tortuosa*, *t.* 1708.

The stems are perennial, two or three inches tall, simple or branched, leafy, smooth, except about the bottom, where they are a little downy with rusty fibres. Leaves linear-lanceolate, acute, keeled, single-ribbed, spreading, entire, except a few occasional teeth near the tip; dilated at the base; yellowish when young; blackish when very old. Fruitstalks towards the tops of the stems, few, about half an inch high, firm, pellucid, reddish. Capsule quite erect, top-shaped, not so long as in Mr. Dickson's plate, its surface very smooth and even. The lid has not been observed. The remaining bases of the teeth in Mr. Dickson's specimen are sufficient to indicate the genus, and we have more, gathered by Mr. Menzies at Prince William's Sound, on the west coast of North America, which confirm it.

Mar 1 1822 published by Sowerby London

LICHEN muscicola.

Gelatinous Moss Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Gelatinous, tufted, olive black. Segments cylindrical, branched, upright, level-topped, bluntish, wavy and uneven. Shields nearly terminal, horizontal, flattish, brown, with an entire border.

SYN. Lichen muscicola. *Ach. Prod.* 215. *Act. Holm. for* 1795. 12. *t.* 1. *f.* 3. *Swartz. Nov. Act. Ups. v.* 4. 248. *Dicks. Crypt. fasc.* 2. 23. *t.* 6. *f.* 9. *Bernhardi in Schrad. Journ. for* 1799. 22. *t.* 2. *f.* 8. *With. v.* 4. 46. *Hull.* 306.
Parmelia muscicola. *Ach. Meth.* 244. *Winch. v.* 2. 59.

ALL our specimens of this curious Lichen have been communicated by the Rev. Mr. Harriman from the county of Durham, where it grows, running over mosses, on rocks and stones; as well as in Scotland and Wales.

Its habit is in appearance that of the tribe called *Cornicularia*, but it is now more justly reckoned by Acharius among the gelatinous Lichens, or *Collemata*, which, though sunk in his *Parmelia*, form as natural a genus by themselves as possible, and we venture to think they may be defined by a technical character, the *gelatinous* accessory margin of the shields, that of the rest being *coriaceous*.

The frond of the present species is very peculiar, consisting of innumerable tufted entangled and interbranching upright compound fibres, all cylindrical, but rugged, bent and wavy without any order or regularity, their ends bluntish, entire, or notched; their substance rigid when dry, soft and gelatinous when wet; their colour olive black. The excellent Bernhardi has well remarked that the shields are often common to two or three of the branches, a thing difficult to explain, except by the tendency which these plants possess, in common with *Fungi*, to unite their various growing parts when they come in contact. These shields are tolerably abundant, small, horizontal, when dry of the colour of the branches, when wet lighter and browner, a little concave when young, the reverse when old, with a thin smooth accessory border.

As Transplanted and Published by Jas. Sowerby, London

PHLEUM Michelii.

Michelian Cat's-tail Grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2, nearly equal, sharp, taper-pointed valves, single-flowered. *Cor.* of 2 beardless valves, included in the calyx, loosely investing the seed.

SPEC. CHAR. Panicle nearly cylindrical, in the form of a spike. Glumes of the calyx lanceolate, somewhat awn-pointed, strongly fringed, and hairy.

SYN. Phleum Michelii. *Allion. Ped. v.* 2. 233. *Schrad. Germ. v.* 1. 187. *t.* 1. *f.* 2.

P. n. 1532. *Hall. Hist. v.* 2. 246.

Phalaris alpina. *Haënke in Jacq. Coll. v.* 2. 91. *Host. Gram. v.* 2. 26. *t.* 35.

Gramen typhoides alpinum, spicâ graciliori delicatâ et villosâ. *Scheuchz. Agr.* 65. *Hall. Enum.* 10. *n.* 264.

DISCOVERED by Mr. G. Don on rocky parts of the high mountains of Clova, Angusshire. His specimen agrees with authentic Austrian, Swiss and Italian ones, sent us long ago by the various authors who have mentioned this curious alpine grass, except in being less luxuriant, owing probably to its more northern, or more barren, place of growth. So rare an acquisition to our *Flora* cannot but be highly welcome. We scruple not to refer it to *Phleum*, as we have adopted the learned Schrader's improved character of *Phalaris*; see *p.* 402. given at the end of *vol.* 30. Our *t.* 222 and 459 should be transferred to *Phleum* likewise.

The root is perennial, tufted, or slightly creeping. Stems a foot or more in height, slender, smooth, erect, leafy more than half way up. Leaves flat, pointed, rough-edged; their sheaths smooth, the upper ones especially lax or inflated. Stipula short, blunt. Panicle upright, cylindrical or slightly ovate, dense, resembling a spike, various in length, green, with more or less of a purple tinge. Calyx-glumes equal, exactly lanceolate, and not abrupt at their inner edge, with sharp, rigid, often inflexed points, their keel strongly fringed, and ribs and sides rough, with white hairs. Valves of the corolla fringed also, unequal, obtuse, shorter than the calyx. Stigmas slender, and loosely feathered.

As it was published by J. & T. Sowerby, London

FESTUCA decidua.

Deciduous Fescue-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves. *Spikelet* oblong, somewhat cylindrical, two-ranked, with sharp-pointed glumes.

SPEC. CHAR. Panicle pointing one way, erect, much branched. Florets two or three, oblong, angular, beardless; the upper ones deciduous. Leaves linear, striated.

SYN. Festuca decidua. *Bellardi Mss.*

GATHERED last summer in Gurness Gill, on the south side of Howes-water, Westmoreland, by the Rev. Mr. Holme, F.L.S. We find his specimens agree in every point with one sent from Piedmont in 1789, under the above name, by our worthy friend Dr. Bellardi, with an inquiry "whether it might be *F. sylvatica* of Villars?" It certainly comes very near that species, which is our *F. calamaria*, *t.* 1005; a name we preferred, as not clashing with *F. sylvatica* of Hudson, our *Bromus sylvaticus*, *t.* 729; but which we shall willingly resign to Schrader's decision in favour of the former.

None of the eminent authors just named, any more than Haller or Scheuchzer, as far as we can find, has adverted to the grass before us, even as a variety; nor indeed did these two great Swiss botanists know our *t.* 1005.

The present is a much more humble and slender plant than that. Leaves not above a third so broad, quite linear, tapering to a fine point; their ribs, furrows and rough edges agree, as do their stipulas, the joints of their stems, and their inflorescence. The spikelets however are very different, consisting of two or three florets at most, of which the upper one is generally abortive, and that, as well as the second, soon falls off, leaving the lowermost only to ripen seed. This is too regularly the case in all our specimens to be attributed to accidental starvation, neither does the plant seem to have a very prolific root to account for it. How far its remarkable scales at the bottom of the stems are peculiar, we have not at present the means of deciding.

Apr 1 1796 Published by J. Sowerby London

TRITICUM cristatum.

Crested Wheat-grass.

TRIANDRIA Digynia.

GEN. CHAR. *Cal.* of 2 valves, solitary, many-flowered, upon a zigzag toothed *rachis.*

SPEC. CHAR. Calyx elliptical, awned, keeled, obscurely ribbed. Florets awned. Spikelets closely imbricated, two-ranked, depressed, straight. Stems simple.

SYN. Triticum cristatum. *Schreb. Gram. fasc.* 2. 12. *t.* 23. *f.* 2.

Bromus cristatus. *Linn. Sp. Pl.* 115. *Willd. Sp. Pl. v.* 1. 439.

Festuca culmo spicato, spiculis multifloris. *Gmel. Sib. v.* 1. 115. *t.* 23.

Gramen triticeum, spicâ latiore compactâ. *Buxb. Cent.* 1. 32. *t.* 50. *f.* 3.

WE cannot resist the temptation of adding a third new British grass to our present monthly publication, and especially so rare and little known a species as this, which Mr. G. Don discovered on steep banks and rocks, by the sea side, between Arbroath and Montrose, flowering very sparingly. Gmelin says it is common throughout Siberia. His own specimens agree with ours, but his figure is as bad as Buxbaum's.

The roots are perennial, with very long, strong, and very woolly fibres, destined to grow in sand. Stems ascending, twelve or eighteen inches high, simple, zigzag, slender, rigid, leafy, hairy at the top. Leaves linear, shortish, with long, close sheaths; their upper surface in our specimen is very hairy, but Gmelin says that character is variable. Spike elliptic-oblong, compressed, of numerous pale oblong spikelets, so crowded as to depress each other, close, smooth or hairy, variable in the number of florets. Calyx-valves elliptical, their side-ribs obsolete or smoothed away; not turgid and curved as in *Triticum prostratum*, which is akin to this, but has an annual root and branched stem.

As it was published by Jas. Sowerby, London.

DICRANUM fulvellum.

Tawny Fork-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem branched. Leaves bristle-shaped, single-ribbed, curved to one side. Capsule turbinate, furrowed, erect.

SYN. Dicranum fulvellum. *Sm. Fl. Brit.* 1209.
Bryum fulvellum. *Dicks. Crypt. fasc.* 4. 10. *t.* 11. *f.* 1.
β. B. immersum. *Dicks. Crypt. fasc.* 4. 15; excluding the synonyms.

NATIVE of rocks in the Highlands of Scotland. Mr. Dickson found it on Ben More. Mr. Borrer communicated it from Ben Nevis. It greatly resembles *Grimmia acuta*, *t.* 1614, but the leaves have longer points, more decidedly curved toward one side. The capsule too is essentially different, as we find by a specimen from Mr. Dickson, in being longitudinally furrowed or ribbed, and the fringe is that of a *Dicranum*. The stems are tufted, branched, rather wavy, an inch and half, or more, in height. Leaves sickle-shaped, broad at the base, of a tawny or yellowish green, shining, with capillary points, and a midrib; entire at the margin. Fruitstalk terminal, erect, scarcely taller than the leaves. Capsule short, brown, shining, with a wide mouth and long red fringe. Lid conical, rather shorter than the capsule.

We have presumed to think Mr. Dickson's *Bryum immersum* a bog variety of this, and different from *t.* 32. *f.* 3. of Dillenius, on which Linnæus founded his *Sphagnum alpinum*. See *t.* 1491.

As Grew published by Jas. Sowerby, London.

DICRANUM polycarpum.

Many-headed Fork-moss.

CRYPTOGAMIA Musci.

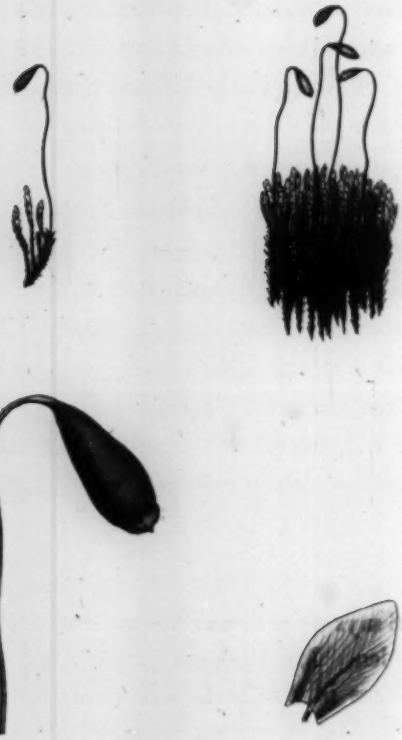
GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem branched. Leaves linear-awlshaped, curled when dry. Capsule obovate, nearly straight, furrowed.

SYN. Dicranum polycarpum. *Ehrh. Crypt.* 84. *Sm. Fl. Brit.* 1227. *Swartz. Musc. Suec.* 32.
Fissidens polycarpos. *Hedw. Sp. Musc.* 159. *Crypt. v.* 2. 85. *t.* 31.

GATHERED in great perfection by Mr. G. Don, upon the summit of Ben High, Aberdeenshire, in August 1802. His specimens agree exactly with those sent us by Ehrhart and Swartz, and we believe are the first observed by any botanist in Britain.

This species is perennial, blossoming in spring, and bearing fruit in summer. The stems form tufts an inch or two high, branched, leafy, clothed with rusty down or radicles in their lower part. Leaves bright green, linear, entire, keeled, single-ribbed, with an awlshaped point, finely marked with *square* reticulations, as is generally the case with mosses that have a single fringe, those with a double one having them frequently *orbicular*. When dry the leaves are incurved and twisted. *Fruitstalks* numerous, terminal, slender, tawny or yellow, an inch high. Capsule green, smooth, and of a slender elliptical form when young; afterwards obovate, abrupt, strongly furrowed, and brown, bent very little toward one side; without any tumor at the base. Lid broad at the bottom, slender and curved upward, shorter than the capsule. Orifice and fringe red.—The male flowers being lateral, caused Hedwig to refer this moss to his *Fissidens*, but it only proves that character of no avail, being so truly a *Dicranum* in habit and affinity.



a Mitchell by J. Swainson

BRYUM julaceum.

Slender-branched Thread-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Outer fringe* of 16 teeth, broad at the base; *inner* a toothed membrane. *Flowers* terminal. *Capsule* ovate-oblong, smooth. *Veil* smooth.

SPEC. CHAR. Stem branched from the base. Leaves ovate, concave, imbricated, obtuse, pointless. Capsule club-shaped, pendulous.

SYN. Bryum julaceum. *Schrad. Spicil.* 70. *Sm. Fl. Brit.* 1357.

B. filiforme. *Dicks. Crypt. fasc.* 4. 16.

B. argenteum β. *Linn. Sp. Pl.* 1586. *Huds.* 489. *With.* 839. *Hull.* 256.

B. pendulum, surculis teretibus viridibus. *Dill. Musc.* 394. *t.* 50. *f.* 63.

B. trichodes, capitulis reflexis, viridissimum holosericeum. *Dill. Giss.* 226. *app.* 86. *t.* 2. *f.* F.

DILLENIUS says he gathered this on the gravel walks of the Oxford garden. Mr. Dickson found it in moist rather mountainous places in Scotland, and our specimens were gathered by Mr. G. Don on the mountain of Clova in Angusshire, in July or August.

This elegant species has been supposed a variety of *B. argenteum*, *t.* 1602, but without much examination. It is much larger, with long slender erect and acute branches, forming dense tufts, of a bright silky green, not silvery. Leaves small, closely imbricated, ovate, entire, rather concave, single-ribbed in the lower part, obtuse, without any hair-like point. Fruit-stalk from the base of a branch, an inch or more in height, wavy, red. Capsule pendulous, brown, smooth, of a slender obovate or pear-shaped form. Lid convex with a little point.

Sphagnum published as per Act of Parliament by Lackington London

BRYUM hornum.

Swan's-neck Thread-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Outer fringe* of 16 teeth, broad at the base; *inner* a toothed membrane. *Flowers* terminal. *Capsule* ovate-oblong, smooth. *Veil* smooth.

SPEC. CHAR. Stem simple. Leaves lanceolate, bordered with fine teeth. Fruit-stalk bowed. Capsule ovate, drooping.

SYN. Bryum hornum. *Huds.* 491. *Sm. Fl. Brit.* 1360. *Hull.* 266. *Sibth.* 290. *Curt. Lond. fasc.* 1. *t.* 71. *Dicks. H. Sicc. fasc.* 4. 23. *Turn. Musc. Hib.* 128. *Winch. v.* 1. 115.

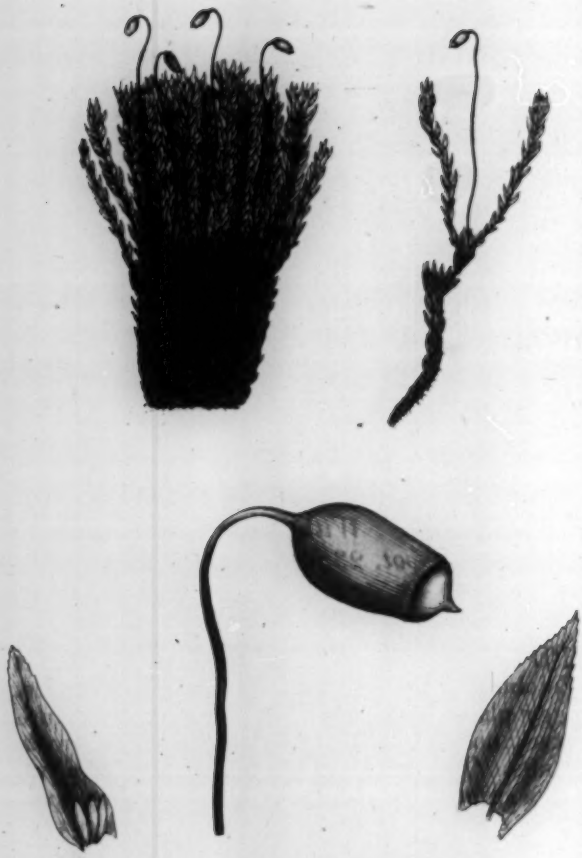
B. stellare hornum sylvarum, capsulis magnis nutantibus. *Dill. Musc.* 402. *t.* 51. *f.* 71.

B. nitidum, capitulis majoribus reflexis, calyptrâ imùm vergente, pediculis oblongis e cauliculis novis egredientibus. *Raii Syn.* 102.

Mnium hornum. *Linn. Sp. Pl.* 1576. *With.* 804. *Lightf.* 711. *Relh.* 419. *Abbot.* 233. *Ehrh. Crypt.* 3.

NOT uncommon in rather moist umbrageous woods, bearing fruit in the spring. It is one of the largest of its genus. The stems form dense, soft, elastic tufts, several inches high, furnished with close, blackish, fibrous, perennial roots. Each stem is simple, annual, whence the trivial name, from one to two inches in height, reddish, leafy. Leaves alternate, bright green, wavy when dry, pellucid, membranous, spreading, lanceolate, acute, beardless, single-ribbed, their edges and keel rather toothed than serrated. The male flowers are terminal, reddish, encompassed with large, spreading, star-like leaves, and are so conspicuous that nobody could overlook them, how much soever botanists might differ about their use. The female ones grow on a different plant. The fruitstalks are solitary, terminal, red, two inches or more in height, most curved in the upper part, so as often to imitate the graceful position of a swan's neck; under the fruit they are a little thickened. Capsule large, drooping, ovate inclining to elliptic, abrupt, turgid, thin, smooth, red brown, with a crimson mouth. Lid convex with a little point. Fringe yellowish.

Specimens of this species, in various stages of growth, were sent by Hedwig to Linnæus to demonstrate the sexes of mosses.



As Smith published by Jas Sowerby London.

BRYUM ventricosum.

Swelling Bog Thread-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Outer fringe* of 16 teeth, broad at the base: *inner* a toothed membrane. *Flowers* terminal. *Capsule* ovate-oblong, smooth. *Veil* smooth.

SPEC. CHAR. Stem determinately branched; the branches ascending. Leaves alternate, ovato-lanceolate, serrated near the point. Capsule swelling, pendulous.

SYN. Bryum ventricosum. *Dicks. Crypt. fasc.* 1. 4. *Sm. Fl. Brit.* 1365. *Relh.* 427. *Turn. Musc. Hib.* 126. *Winch. v.* 1. 115.

B. triquetrum. *Huds.* 490, *α*. *Hull.* 256.

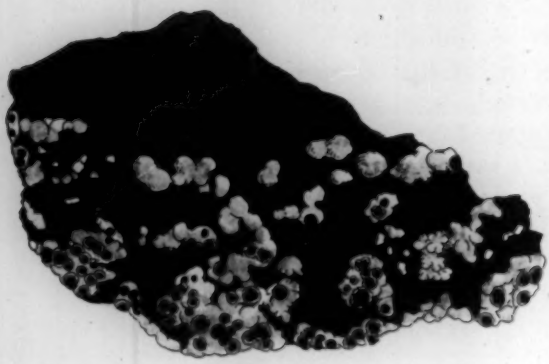
B. annotinum palustre, capsulis ventricosis pendulis. *Dill. Musc.* 404. *t.* 51. *f.* 72.

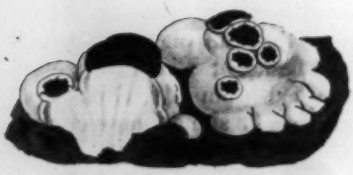
B. nitidum, foliis serpilli angustioribus, majus. *Dill. in Raii Syn.* 102.

Mnium pseudo-triquetrum. *Hedw. Sp. Musc.* 190. *Crypt. v.* 3. 19. *t.* 7. *With.* 108.

M. triquetrum. *Abbot.* 235. *Lightf.* 715.

GATHERED on the sandy brink of the river at Meavis bank near Edinburgh, bearing fruit in April. It prefers marshy or boggy places, especially where there is a mixture of sand or gravel, not mud. The long perennial rusty roots grow in close tufts. The stems are bright red, and have two or more branches springing from beneath the fructifying spot, which ascend in a slightly spreading posture. Leaves pale green, lax, rather alternate than three-ranked, moderately spreading, lanceolate, or in some measure ovate, acute, single-ribbed, serrated near the top, twisted when dry. Male and female organs often in the same flower, according to Hedwig. Fruitstalk from the top of last-year's branch, an inch and half or two inches high, nearly upright, red below, yellowish above. Capsule pendulous, ovate, short, tumid near the base, a little constricted under the mouth. Hedwig draws it, as he himself describes it, contracted at the base after the seeds are discharged. Lid convex, with a rather prominent point. Fringe yellow.





Published by Sowerby London

LICHEN frustulosus.

White-scaled Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Crust tartareous, yellowish white, in dispersed, tumid warts, at length somewhat imbricated, lobed, and variously shaped. Shields dark brown, with a white, crenate margin like the crust.

SYN. Lichen frustulosus. *Dicks. Crypt. fasc.* 3. 13. *t.* 8. *f.* 10. *With. v.* 4. 19. *Hull.* 289. *Ach. Prod.* 76.
Parmelia frustulosa. *Ach. Meth.* 172.
P. atra β, argopholis. *Ach. Meth. Suppl.* 32.

COLLECTED on the micaceous rocks of the mountains of Breadalbane by Mr. Borrer, who assures us of the above synonyms, on the authority of Mr. Dickson's herbarium, and of specimens from the celebrated Acharius. The latter could scarcely be aware that the plant he received from Mr. Wahlenberg, by the name of *Parmelia argopholis*, was what he had already adopted from Mr. Dickson's work; but we are much surprised that he should now consider it as a variety of our *L. ater*, *t.* 949, from which its mode of growth is surely fundamentally distinct.

We do not find the black under-crust or stratum described by Mr. Dickson, probably because our plant is not old enough. Ours consists of little, roundish, tumid, smooth, tartareous lumps, externally of a pale-yellowish or greenish white, and very smooth, which at length become crowded, lobed at the edges, and somewhat imbricated, assuming various shapes. Shields numerous, rather elevated; their disk dark brown, concave at first, finally convex and blackish; their border of the substance of the crust, thickish, inflexed, crenate, and sometimes jagged, at the inner edge.—The name we retain for this species is unexceptionable, and has the precedence in point of date. That of Wahlenberg, equally good, we have translated in the English appellation.

1.
2.

FUCUS digitatus.

Fingered Fucus, or Sea Hangers.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced in clustered tubercles, which burst at their summits.

SPEC. CHAR. Frond leathery, palmate, with sword-shaped segments, destitute of ribs. Stalk round. Root fibrous.

SYN. Fucus digitatus. *Huds.* 579. *Linn. Mant.* 134. *Gooden. & Woodw. Tr. of Linn. Soc. v.* 3. 152. *Turn. Syn.* 207. *Hist. Fucor. v.*3. 65. *t.* 162. *With. v.* 4. 98. *Hull.* 320. *Lightf.* 935. *Stackh. Ner.* 5. *t.* 3. *Fl. Dan. t.* 392.

F. hyperboreus. *Gunner. Norveg.* 34. *t.* 3.

F. arboreus polyschides edulis. *Raii Syn.* 46.

F. polyschides. *Ger. em.* 1570.

FOUND on various parts of the British coasts, especially towards the north. It is often thrown up on the shore at Leith in great abundance, and of a very large size, with the stalk even six feet long, and an inch in diameter.

The root consists of many thick clasping fibres. Stalk simple, various in length and thickness. Frond more or less deeply and copiously palmate or fingered, without rib or vein, leathery, olive brown, rounded at the base; its segments taper-pointed, entire, flat, sometimes subdivided. Fruit first discovered by Mr. Borrer at Brighthelmston, along with that of *F. saccharinus, t.* 1376, both which bear a strong analogy to those of *F. esculentus, t.* 1759, and *bulbosus, t.* 1760. We cannot thence deduce any characters to refute or to confirm Mr. Turner's suspicion that the present plant is not specifically distinct from *saccharinus*, except that the fruit of the latter, represented in our present plate at *f.* 2, is rather the largest, but this might be owing to its more advanced state.

This Fucus serves for manure, and for the manufactory of kelp, like many other species.

May 1.1822 published as the Act directs by Sowerby London

SAXIFRAGA rivularis.

Alpine Brook Saxifrage.

DECANDRIA Digynia.

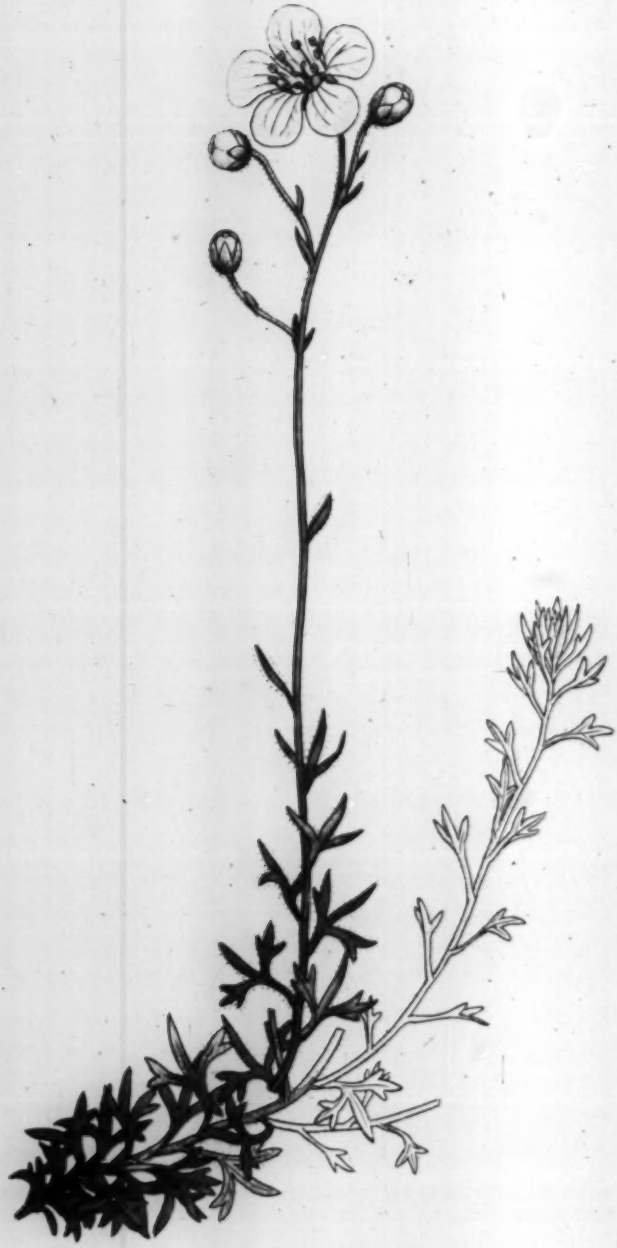
GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with 2 beaks, 1 cell, and many *seeds.*

SPEC. CHAR. Leaves palmate, stalked; the uppermost spatulate. Stem few-flowered. Root fibrous. Germen half inferior.

SYN. Saxifraga rivularis. *Linn. Sp. Pl.* 577. *Fl. Lapp. n.* 174. *t.* 2. *f.* 7. *ed.* 2. 142. *Sm. Fl. Brit.* 454. *Fl. Dan. t.* 118.

A RARE inhabitant of alpine rills in the Highlands of Scotland, specimens of which were communicated to Mr. Sowerby by Mr. G. Don. It is perennial, flowering in June or July.

The root is fibrous and somewhat creeping. Stems decumbent at the base, two or three inches high, scarcely branched but at the bottom, bearing from two to five flowers, on stalks that are slightly downy and viscid. Lower leaves on long stalks, smooth and fleshy, palmate, in three or five rounded lobes, of which the middle one is the largest; one or two ovate or spatulate undivided leaves accompany the flowers. The petals are white, single-ribbed, rounded, not much exceeding the calyx, which is half inferior, surrounding the middle of the capsule.



May 1 as published by Jo. Sowerby &c.

SAXIFRAGA platypetala.

Broad-petalled Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with 2 beaks, 1 cell, and many *seeds.*

SPEC. CHAR. Leaves in three or five bristle-pointed segments. Shoots procumbent. Stem somewhat leafy. Petals obovate, nearly orbicular.

SYN. Saxifraga platypetala. *Sm. Tr. of Linn. Soc. v.* 10. 341.

MR. TURNER gathered this Saxifrage upon Snowdon in 1802, and communicated it to us long ago as a new species, which we find confirmed by an examination of all the books and specimens that have come in our way. Mr. G. Don found the same on the mountains of Clova, Angusshire, as will appear, among many other interesting discoveries of his, in the 10th vol. of the Linnæan Society's Transactions, part 2.

It is perennial, agreeing greatly in habit with *S. hypnoides*, *t.* 454, but is usually more luxuriant. The leaves are less simple, being almost universally divided into three, sometimes five, lobes, a few on the upper part of the flowering stem only being undivided. Each lobe is awned or hair-pointed. The petals, very useful in discriminating *Saxifragæ*, are remarkably different, being so broad in their limb as to be almost orbicular. They have three principal ribs, united in the lower part, of which the middlemost is either quite simple, or deeply cloven into two simple branches, while the lateral ribs send off numerous irregular fine branches, towards the edge of the petal. The leaves and stem are clothed with scattered soft hairs, and the flowerstalks and calyx with brownish glandular viscid ones.

Magazine published by J. & C. Sowerby, London.

SAXIFRAGA elongella.

Long-stalked Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with 2 beaks, 1 cell, and many *seeds.*

SPEC. CHAR. Leaves in three or five bristle-pointed segments; their base elongated: the uppermost linear and undivided. Flowerstalks very long and naked.

SYN. Saxifraga elongella. *Donn. Cant. ed.* 5. 107. *Sm. Tr. of Linn. Soc. v.* 10. 340.

OUR specimens from Mr. G. Don were gathered on a rock by a river called Lintrathen, a mile and half north of Airly castle, Angusshire. The stems creep considerably, and are smooth, slightly leafy, throwing out numerous short, much more leafy, branches. The lower leaves on each branch, and one or two below the flowerstalk, are linear and undivided; the rest, from a long narrow base, divide suddenly into three oblong, acute, nearly equal lobes, the two outermost of which are sometimes cloven; all the leaves are more or less fringed with soft hairs, and their points tipped with a small bristle. What chiefly characterize this species are the solitary, simple, terminal, naked flowerstalks, very slightly glandular, each about two inches tall, and bearing a very large white upright flower, whose germen is inferior, calyx-teeth ovate, and petals obovate, entire, with three slender ribs, separating a little above the base, the lateral ones incurved to the midrib before they reach the top. In cultivated specimens there are sometimes one or two lateral 2-flowered stalks, but this is not natural to the plant. It blossoms early in summer.

Published by J.C. Curtis, London.

SAXIFRAGA pedatifida.

Pedatifid Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with 2 beaks, 1 cell, and many *seeds*.

SPEC. CHAR. Radical leaves kidney-shaped, divided in a pedate manner into seven lobes: stem-leaves palmate or linear. Stem naked below, branched. Petals linear-obovate.

SYN. Saxifraga pedatifida. *Ehrh. Exsicc. n.* 15. *Sm. Tr. of Linn. Soc. v.* 10. 340.
S. quinquefida. *Donn. Cant. ed.* 5. 107.

EHRHART, a very accurate observer of whatever plants he could procure, first distinguished this species from *S. geranioides*, with which his countrymen the Swiss seem to have confounded it, and he gave it the above apt name. Mr. G. Don, and the late Mr. J. Mackay, both gathered this plant in the Highlands, the former on the mountains of Clova, Angusshire. Our figure is unavoidably taken from a cultivated specimen. This Saxifrage flowers in May, and is, of course, perennial, forming spreading cushion-like tufts, by means of its long and branching shoots, being one of the most rambling of its tribe. The very numerous radical leaves are deeply cut into three lobes, which vary greatly in breadth, and the side ones are again lobed in a pedate manner; all are acute, and somewhat fringed, like their long narrow flat footstalks. The flowerstalks are a span high, central and solitary, slightly hairy; naked below; branched and leafy above, such upper leaves being some deeply and narrowly palmate, others undivided. The flowers are numerous and corymbose, but proportionably small. Germen inferior. Calyx hairy, lanceolate. Petals white, obovate but narrow, their ribs much like those of *S. elongella*.

May 1 1820 published by Jas Sowerby London

DICRANUM montanum.

Mountain Curled Fork-moss.

CRYPTOGAMIA Musci.

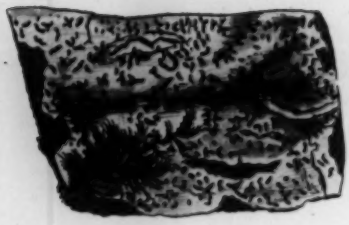
GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven, teeth, a little inflexed.

SPEC. CHAR. Stem branched. Leaves linear-lanceolate, taper-pointed; curled when dry. Capsule cylindrical, straight.

SYN. Dicranum montanum. *Hedw. Sp. Musc.* 143. *t.* 35. *f.* 8—13. *Sm. Fl. Brit.* 1228.

MR. G. Don has gathered this on bogs in Scotland, but rarely. We are obliged to have recourse to fine exotic specimens, communicated by Professor Swartz, to execute our figure, the Scottish one, though formerly compared with these, and described in *Fl. Brit.*, not being now within our reach.

The stems vary in height from half an inch to two inches, composing dense perennial tufts, being branched and densely leafy. Leaves pale green, linear-lanceolate, taper-pointed, entire, slightly revolute, single-ribbed, curled and twisted when dry; their base dilated, and approaching an ovate shape. Fruitstalks soon becoming lateral, pale brown, straight, hardly an inch high. Capsule upright and straight, cylindrical inclining to ovate, pale brown, smooth, becoming furrowed as it ripens. Lid awlshaped, short, rather curved. Fringe brown, not, as in many of this genus, crimson. There is no tumour or appendage at the bottom of the fruit, such as is seen in *D. virens, t.* 1462.



May 1 1811 published by Jas. Sowerby London

OPEGRAPHA diaphora.

Various-fruited Opegrapha.

CRYPTOGAMIA Algæ.

GEN CHAR. *Seeds* in black, linear, sessile, simple or branched, bordered *clefts*, in an uninterrupted crust.

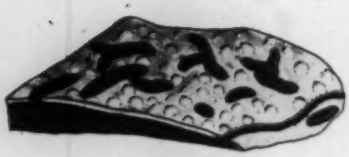
SPEC. CHAR. Crust thin, smooth, white. Clefts simple, elevated, unequal; the largest elongated and wavy.

SYN. Opegrapha diaphora. *Ach. Meth.* 19. *Winch. v.* 2. 30.

O. varia. *Persoon in Ust. Ann. fasc.* 7. 30.

Lichen diaphorus. *Ach. Prodr.* 20.

NOT unfrequent on the trunks of trees. We received it from Mr. Turner, who had previously determined the species, and we find no essential difference between his specimen and those of Acharius and Swartz. We confess however very great difficulty in distinguishing the present species from *O. notha, t.* 1890.—The crust is indeterminate, scarcely limited, thin, either quite smooth or a little scaly, not powdery, white, scarcely greyish. Clefts rather dispersed, of two different appearances, either oblong, short and straight; or linear, elongated, and zigzag. The breadth is nearly equal in all; they are very black, and their disk becomes by age dilated and somewhat convex.



May 1 1821 published by J.& J. Sowerby London

OPEGRAPHA betulina.

Birch-bark Opegrapha.

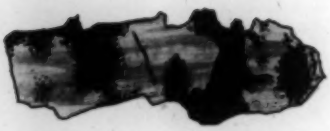
CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* in black, linear, sessile, simple or branched, bordered *clefts*, in an uninterrupted crust.

SPEC. CHAR. Crust very thin, dilated, white, bordered with black. Clefts mostly simple, prominent, linear, with an extremely narrow disk.

SYN. Opegrapha betulina. *Persoon in Ust. Ann. fasc.* 7. 31. *t.* 3. *f.* 5, *A, a. Ach. Meth.* 20.
Lichen betulinus. *Ach. Prodr.* 23.

THIS occurs on the smooth bark of the common Birch, and was sent us from near Yarmouth by Mr. Turner. The patches are rather broad, white, smooth and somewhat shining, with a thin brown or blackish edge, chiefly visible when the plants meet and confine each other's growth; otherwise the growing margin is white and indeterminate. Clefts inclined to be parallel, straightish, or slightly zigzag, linear, narrow, sometimes tapering at each end to a sharp point, elevated, of a shining black, scarcely powdery, in our specimens at least; their disk less in diameter than the border on either side. Sometimes we have found a few of the clefts here and there forked, or confluent, which we have taken care to express, but such are very unusual.



Magazine published by Jas. Sowerby, London.

OPEGRAPHA epiphega.

Broad Wrinkled Opegrapha.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* in black, linear, sessile, simple or branched, bordered *clefts*, in an uninterrupted crust.

SPEC. CHAR. Crust very thin, evanescent. Clefts simple, oblong, rather tumid, of various shapes, much crowded, at length running into broad patches.

SYN. Opegrapha epiphega. *Ach. Meth.* 24. *Winch. v.* 2. 30.

O. faginea. *Persoon in Ust. Ann. fasc.* 7. 31.

Graphis maculiformis. *Ehrh. Crypt.* 263.

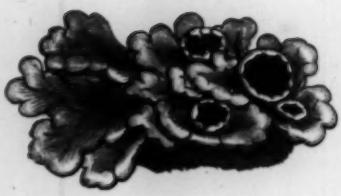
Lichen rugosus. *Linn. Sp. Pl.* 1607. *Huds.* 524. *With. v.* 4. 4. *Hull.* 284. *Lightf.* 802. *Sibth.* 317. *Abbot.* 257.

L. macularis. *Relh.* 446.

Lichenoides punctatum et rugosum nigrum. *Dill. Musc.* 125. *t.* 18. *f.* 2.

FEW persons who have attended at all to the most common appearances in nature, can have failed to observe this cryptogamic plant, which makes broad black patches every where on the smooth and even bark of young Beeches and Oaks. The crust is so thin, scaly, and evanescent, as scarcely to be detected with certainty except in a very young state. The clefts are extremely numerous and crowded, small, simple, coal black, various in length, mostly curved, blunt at each end, frequently oval or almost orbicular when young; their disk narrow; edges tumid, unequal and shining. By age the clefts become dilated, confluent, and look as if they had been rubbed down into a nearly even surface, entirely black, and slightly sunk below the level of the bark.—*O. macularis*, *Ach. Meth.* 24, seems a slight variety.

When we carefully examine the early growth of this plant, observing how its black clefts or receptacles are actually sunk into the bark, and rise from under the cuticle, which, in scaling off to let them pass, merely assumes the aspect of a crust, we are much disposed to refer it to the genus of *Fungi* called by some authors *Hysterium*; but the most profound cryptogamists have thought otherwise.



May 1 1805 published by J. Sowerby London.

LICHEN Hookeri.

Hookerian Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.

Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Imbricated, depressed; segments bluntly lobed and notched, radiant, somewhat striated, silver-grey; black and naked beneath. Shields black, with elevated, crenate, grey margins.

DISCOVERED upon the micaceous rocks of Ben Lawers and Mael Greadha in the Highlands by Mr. W. Borrer, who has named it after our mutual friend Mr. W. Jackson Hooker, kindly allowing us to participate in the pleasure of paying so just a tribute to his knowledge and liberality.

This very elegant species does not agree with any specimens received from the learned Swedish botanists, either by Mr. Borrer or ourselves. It seems most allied to *L. affinis, t.* 983, or some of that tribe. The fronds consist of small, silver-grey, imbricated, slightly elevated, oblong portions or leaflets, whose disk is obscurely striated; their margins tumid, crenate, paler; their extremities dilated and radiant, especially such as form the circumference of the crust. The shields are abundant, a little raised, of a moderate size, black, opaque, scarcely concave or convex, with a prominent, crenate, inflexed border, of the substance and pale whitish hue of the crenatures of the fronds.

1.

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Mag.Nat.Hist. Published by Jas. Lowry, London.

COLLEMA Schraderi.

Schraderian Collema.

CRYPTOGAMIA Algæ.

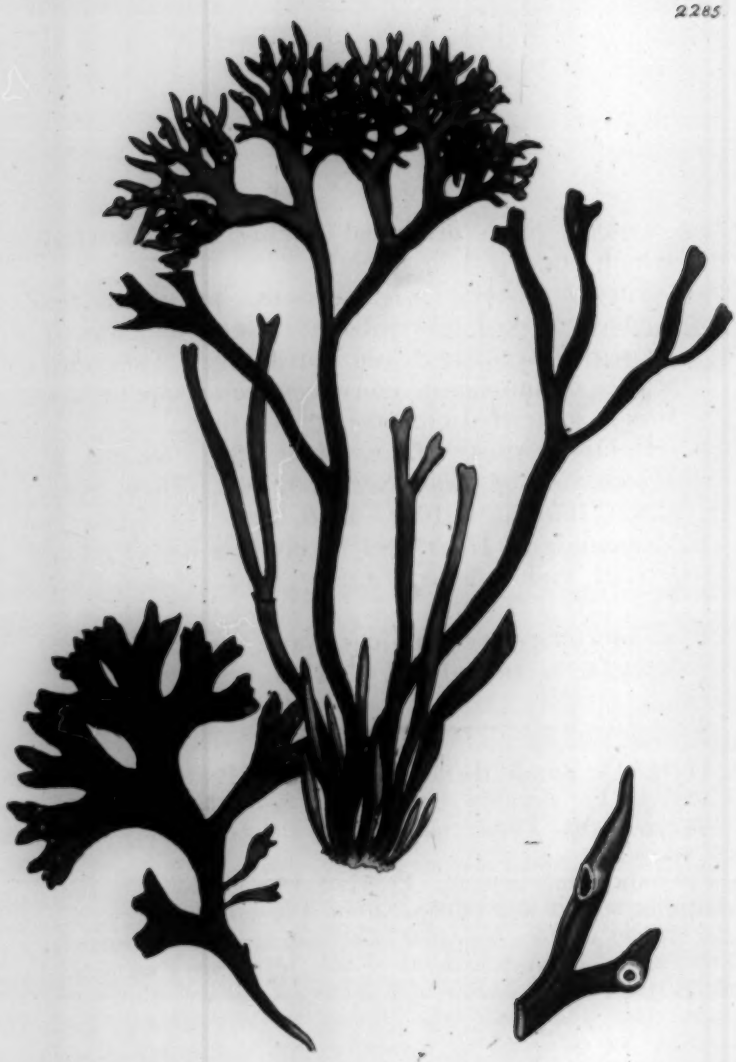
GEN. CHAR. *Shields* orbicular, horizontal, nearly sessile, superficial, with a gelatinous accessory border.

SPEC. CHAR. Frond somewhat fleshy, tufted, erect, branched in a forked manner, rugose. Shields lateral, reddish, with a pale border.

SYN. Collema Schraderi. *Sm. Fl. Brit. v. 4, ined.*
Lichen Schraderi. *Bernh. in Schrad. Journ. for 1799, fasc. 1. 22. t. 2. f. 5.*
Parmelia Schraderi. *Ach. Meth. 243.*

OUR specimens marked 1 were gathered during a visit to Matlock bath in June 1783, on a low stone wall next to a wood, half way betwixt the two principal inns. No British botanist has observed the same, and they have remained undescribed hitherto; but we find them exactly accord with what Dr. Schrader has sent us under the above name. They compose little tufts, mixed with moss, among the crumbling mortar and limestone, and grow erect, repeatedly branched, forked and level-topped. They are of a dull and darkish olive green; paler below; compressed and shrivelled when dry; gelatinous and somewhat fleshy when wet. Such is the indubitable *C. Schraderi*, on which no fructification has yet been found.—Fig. 2 represents a plant found by Mr. Turner on Caistor church, Norfolk, also on heaths near Bury, and in Sussex, which has small reddish shields. He thought it a distinct species; but considering how much this gelatinous family often varies when it bears fruit, and still how little essential difference there is between the two specimens, we venture to publish them, at least for consideration, as the same.

As to the genus now first introduced to our readers, we have hinted at it in *p.* 2264, and are persuaded that none of this natural order can be more natural or distinct.



May 1 1819 published by Jas Sowerby London

FUCUS crispus.

Crisped Fucus.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced in clustered tubercles, which burst at their summits.

SPEC. CHAR. Frond cartilaginous, purplish, repeatedly forked, corymbose, crisped and wavy; its segments dilated and spreading. Tubercles scattered, immersed, convex on one side of the frond, somewhat concave at the other.

SYN. Fucus crispus. *Linn. Mant.* 134. *Gooden. & Woodw. Tr. of Linn. Soc. v.* 3. 169. *Turn. Syn.* 226. *With. v.* 4. 106. *Hull.* 322.

F. ceranoides. *Huds.* 582, excluding his varieties *lacerus* and *inflatus*. *Lightf.* 913. *Gmel. Fuc.* 115. *t.* 7. *f.* 1—3.

F. membranaceus ceranoides, variè dissectus. *Raii Syn.* 44. *n.* 16; also *n.* 17 & 18.

COMMON on all the British coasts. Perennial, as is evinced by the shooting stems in our figure that have been broken off. Mr. Turner marks from October to May as its best season.

The radical disk is small. Fronds numerous, dull purplish, cartilaginous, flat and veinless, from 1 to 4 inches high, dilated variously, from a slender base, into a repeatedly forked, clustered and corymbose head of twisted or wavy segments, greatly differing in breadth and acuteness, all entire at their edges, though notched, when broad, at their points. The tubercles are orbicular or somewhat oval, immersed in the substance of the segments, very convex, and often umbilicated, on one side of the leaf, while the other is more or less concave. We have not room to define all the Proteus-like variations in the height, breadth, or subdivision of the frond, nor to quote their various synonyms, which the curious will find indicated in Mr. Turner's *Synopsis*, and still further perhaps explained when this species appears in his *Historia Fucorum*.

May 1 1820 published by Jas. Sowerby London.

ULVA umbilicalis.

Peltate Laver.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Frond* membranous or gelatinous. *Seeds* solitary, scattered throughout its substance, under the cuticle.

SPEC. CHAR. Somewhat coriaceous, orbicular, sessile, peltate, spreading nearly flat, variously lobed.

SYN. Ulva umbilicalis. *Linn. Sp. Pl.* 1633. *Huds.* 567. *With. v.* 4. 121. *Hull.* 311. *Lightf.* 967.
U. marina umbilicata. *Dill. in Raii Syn.* 62.
Tremella marina umbilicata. *Dill. Musc.* 45. *t.* 8. *f.* 3.

NOT rare on the sea coast, where it grows solitary and dispersed, adhering to stones and rocks by its central root, and is often thrown up on the more sandy shores.

Its substance, membranous when young, becomes considerably thickened, and almost coriaceous, not adhering to the papers in which it is dried. The colour is purplish with a tinge of brown and green; sometimes altogether a dull purple; but the surface is shining and very smooth. Each plant is about a span wide, often much more, somewhat orbicular, variously cut or lobed even to the centre, the edges crisped and wavy, the substance frequently torn by the wind or waves. The whole, under a magnifier, being finely and regularly cellular within, looks dotted. Here and there are seen a few seeds, dispersed in small clusters, darker than the frond. These Mr. Turner has sent us. Mr. W. Borrer, to whom we are obliged for the larger specimen, observes that Roth's *U. purpurea, Catalect. v.* 1. 209. *t.* 6. *f.* 1, is merely an oblong variety of this.

Jan 1.1831 published by J.E. Sowerby London

CONFERVA nummuloides.

Money-wort Conferva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Simple, slender, brittle, palish brown. Joints rather broader than long, red in the centre, combined in pairs.

SYN. Conferva nummuloides. *Dillw. Syn.* 45. *n.* 25. *t.* B.

GATHERED by Mr. Borrer, on whom we rely for the name, in March 1811, among *Conferva flocculosa*, adhering to various others of the same genus, in Shoreham harbour, Sussex. Mr. Sowerby has also received the same, amongst numerous minute and imperfect *Confervæ*, from Miss Biddulph. Mr. Dillwyn found his plant in the river Lea.

The filaments are short, tortuous, and cylindrical, of a brittle nature. Their colour a dirty white, except that in the centre of each joint is a round assemblage of seeds, of a yellowish, brownish, or red colour. The latter is the case in our specimens, which seem to be more perfect than Mr. Dillwyn's, showing moreover that the joints are combined in pairs.

CONFERVA bicolor.

Party-coloured Conferva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Simple, slender, straight, bright green. Joints thrice as broad as long, white-edged, even; several of them together here and there empty, white and pellucid.

NOTWITHSTANDING all that has been done by the labours and acuteness of Mr. Dillwyn, there are still many discoveries probably to be made in the genus *Conferva*, and there are few botanists more likely to make them, and to establish new species on sure grounds, than Mr. W. Borrer, who found the present plant growing on stones in a rapid streamlet at Henfield, Sussex. Our intelligent correspondent observes that its straight habit is exactly like *C. dissiliens*, Dillw. t. 63, and the dimensions of the joints agree with that. The great peculiarity of our *bicolor* consists in an interruption of colour here and there, seen in the fresh filaments, and by no means indicating decay. This is the more remarkable, as each joint in which the colouring matter terminates, is rounded off externally, making the extremity, on either hand, of an oval spot, formed of an assemblage of more or fewer perfectly-coloured joints. We do not understand that the filaments are so brittle as in the *dissiliens*. Mr. Sowerby found them less than a thousandth part of an inch in diameter.

CONFERVA diffusa.

Diffuse Green Conferva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Green, much branched, diffuse, somewhat zigzag; the ultimate branches frequent, short, blunt. Joints four times as long as broad, of an uniform colour, with pellucid partitions.

SYN. Conferva diffusa. "*Roth. Catal. fasc.* 2. 207. *t.* 7." *Dillw. Syn.* 65. *Conf. t.* 21.

COLLECTED in the sea at Brighthelmstone by Mr. W. Borrer. It springs from a minute callous base, forming loosely entangled, dullish green, tufts, from 2 to 6 inches long, rather rigid and harsh to the touch. The filaments are as thick as horse-hair, branched from the very bottom, but not very copiously nor regularly, their branches zigzag, divaricated and spreading amongst each other; being often, as Mr. Dillwyn remarks, as much entangled as *Fucus plicatus*. The ultimate branches are numerous, short and simple, obtuse, occasionally alternate or following each other, all originating, as in other species, from the partitions, which are narrow, white and pellucid. The joints are even (except when dried) 3 or 4 times as long as broad, of an uniform green, except that when investigated, against the light, with a microscope, the thickness of the white skin gives them the appearance of a pellucid border, caused by some shrinking of the green mass within.

2290.

CONFERVA littoralis.

Common Soft Conferva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

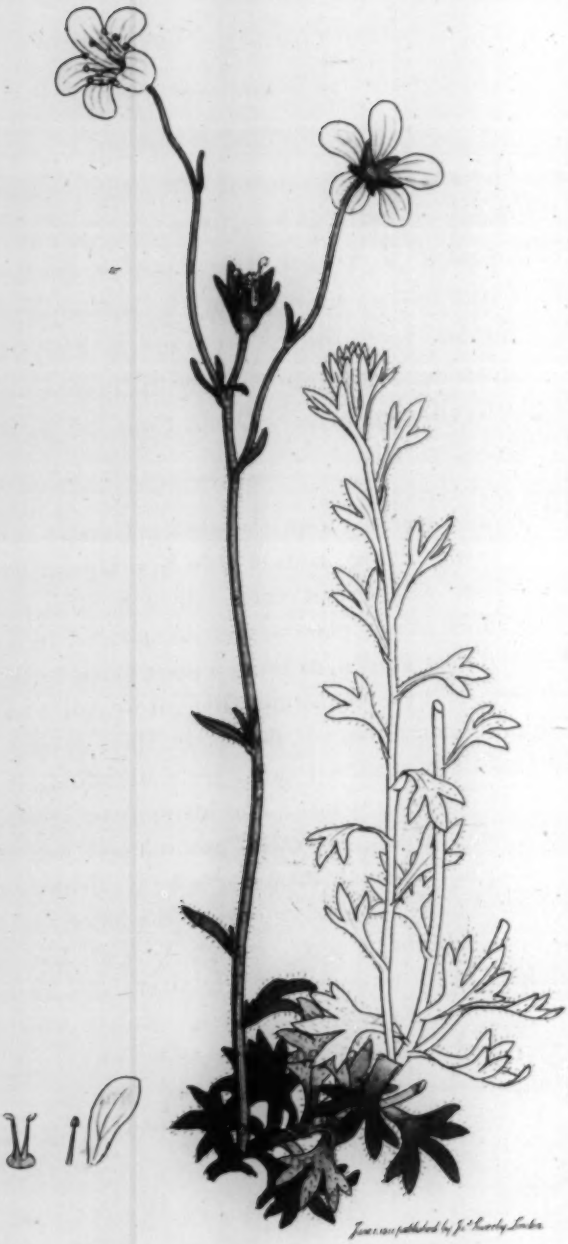
SPEC. CHAR. Olive-brown, very much branched, slender, wavy, densely entangled and twisted; the points tapering and prominent. Joints cylindrical, twice as broad as long.

SYN. Conferva littoralis. *Linn. Sp. Pl.* 1634. *Huds.* 594. *With. v.* 4. 130. *Hull.* 331. *Lightf.* 979. *Dillw. Syn.* 32, 70. *Conf. t.* 31.

C. marina capillacea longa, ramosissima, mollis. *Dill. in Raii Syn.* 59. *Musc.* 23. *t.* 4. *f.* 19.

Ceramium confervoides. *Roth. Catal. v.* 1. 151.

COMMON on the sea shore, growing strongly attached, in dense tufts about 6 inches long, to rocks, stones, shells, or the larger submarine plants. Its colour is a rusty brown, or tan colour, with tints of a green or purplish cast. The substance is very tender and soft, but not gelatinous. Filaments slender, with innumerable ramifications, growing twisted and entangled together like ropes, while the taper very acute ultimate divisions project on all sides, giving a feathery appearance. The joints were not detected by Dillenius. They are twice as broad as long; their partitions, according to Roth and Dillwyn, two excellent authorities, dark; we find them pale, and are told they vary, according to age or circumstances, in this respect. The fructification, in the form of little lateral globes, drawn by Mr. Dillwyn, we have not seen. He appears to have found it but once.



Jones ad nat. published by J. & Sowerby London

SAXIFRAGA hirta.

Trifid Hairy Saxifrage.

DECANDRIA Digynia.

GEN. CHAR. *Cal.* 5-cleft. *Petals* 5. *Caps.* with 2 beaks, 1 cell, and many *seeds.*

SPEC. CHAR. Leaves in five, or three, deep, elliptical, acute lobes; hairy, like the stem and footstalks. Shoots ascending. Stem erect, leafy, with few flowers. Petals obovate, with three simple nerves.

SYN. Saxifraga hirta. *Donn. Cant. ed.* 5. 107.

WE have received from the worthy Curator of the Cambridge garden living plants of this Saxifrage under the above name, along with several others, all of Scottish growth; but the specimen in our plate was communicated by Mr. Joseph Woods from a garden, as being a plant found by Mr. Mackay in Ireland. It proves distinct from all we can find described of this intricate tribe. It flowers in May, or early in June, and forms lax perennial tufts, with ascending leafy shoots, and erect flowering stems. The leaves have broad flat footstalks, marked with a central groove, and exceeding their own length. They are themselves deeply divided or fingered, the lobes 3 or 5, the 2 outer ones in the latter case less separated; all elliptical, acute, entire; fringed, like the shoots, with long, soft, white hairs. The stem varies in height according to circumstances, and is clothed with glandular hairs; it bears 3 or 4 loosely panicled, white, large flowers, accompanied by a few simple oblong bracteas. The petals are obovate, in which this species differs from *S. palmata*, *t.* 455, though in many points they agree, especially in their pubescence. Three green simple ribs are found in each petal, combined for a short distance from the bottom.

Published by Jas. Sowerby London

NUPHAR minima.

Least Nuphar.

POLYANDRIA Monogynia.

GEN. CHAR. *Calyx* of 5 or 6 leaves. *Petals* numerous, inserted, with the stamens, into the receptacle, bearing honey at their backs. *Stigma* with radiating furrows, sessile. *Berry* superior, of many cells. *Seeds* numerous.

SPEC. CHAR. Calyx of five leaves. Stigma toothed. Footstalks two-edged. Lobes of the leaves rather distant.

SYN. Nymphæa lutea β, minima. *Willd. Sp. Pl. v.* 2. 1151.

DISCOVERED by Mr. W. Borrer in the lake on the Highland mountain Ben Cruachan. From his native specimen, well preserved, and his coloured sketch of the stigma, taken on the spot, our figure is drawn. Few more interesting additions to the British Flora have lately been made. We take advantage of it to establish in our work the genus *Nuphar*, first adopted from Dioscorides, in *Prodr. Fl. Græc. v.* 1. 361, which embraces the yellow kinds of Water-Lily, see *t.* 159; and is clearly distinguished, by the above characters, from the true *Nymphæa* of that ancient author, see *t.* 160; to which the white and rose-coloured kinds belong, as will appear in the new edition of the valuable *Hortus Kewensis*. Mr. Salisbury determined that the nectary of these last is a globe in the centre of the stigma, while that of *Nuphar* is at the backs of the petals.

The present species differs from *Nuphar lutea*, *t.* 159, in its much smaller size, the flowers being but the bigness of the *Trollius*, *t.* 28, and especially in its deeply-toothed, green-bordered, stigma, and compressed footstalks. The leaves are somewhat silky beneath, and their lobes rather spreading or divaricated.

James now published by J. Sowerby Londn.

CAREX Mielichoferi.

Loose-spiked Rock Carex.

MONOECIA Triandria.

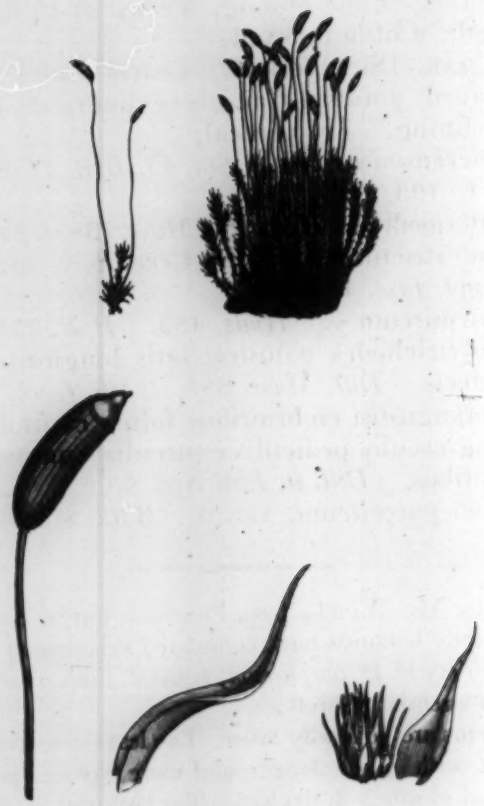
GEN. CHAR. Male, *Catkin* imbricated. *Cal.* of one scale. *Cor.* none. Female, *Catkin* imbricated. *Cal.* of one scale. *Cor.* none. *Stigmas* 2 or 3. *Seed* clothed with a swelling tunic.

SPEC. CHAR. Sheaths not half the length of the flower-stalk. Female spikes three, distant, erect, lax and slender. Fruit ovate, triangular, bluntly cloven, twice the length of the obtuse scale.

SYN. Carex Mielichoferi. "*Schkuhr Caric. fig.* 198." *Willd. Sp. Pl. v.* 4. 276.

FOUND by Mr. W. Borrer, in August 1810, on the rocky ledges of Craig Challoch, in Breadalbane. We rely, for Schkuhr's synonym, upon Willdenow, who says moreover this is *C. alpina* of Hoppe. It is entirely new to British botanists, and of all our *Carices* is most akin to *depauperata*, *t.* 1098, though abundantly distinct from that and every other in our Flora.

The root appears to be creeping or stoloniferous. Stems about a foot high, smooth, roundish. Leaves chiefly radical, flat, smooth, with acute stipulas. Bracteas nearly the length of the slender flowerstalks, erect, acute; their sheathing part about one third of the whole. Female spikes three, upright, lax, the lowermost consisting of about a dozen flowers, the uppermost of half as many; their glumes broad, rounded and bluntish, red-brown, with a broad yellowish rib. Stigmas three. Fruit green, ovate, slender, incurved, triangular, roughish-edged, its orifice rounded and cloven. Male spike solitary, terminal, erect, oblong, bluntish, of numerous, obovate, red-brown scales, much longer than those of the females. Stamens three, whitish.



DICRANUM strictum.

Tall Shining-stalked Fork-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong. *Fringe* of 16 flat, cloven teeth, a little inflexed.

SPEC. CHAR. Stem forked. Leaves ovate, with awl-shaped points. Capsule cylindrical, furrowed, inclining. Lid conical.

SYN. Dicranum strictum. *Sm. Fl. Brit.* 1218. *Winch.* v. 1. 103.

D. intermedium. *Hedw. Sp. Musc.* 138. *t.* 31. *f.* 1—6?

Bryum strictum. *Hoffm. Germ.* v. 2. 36. *Dicks. Crypt. fasc.* 4. 13.

B. purpureum γ. *Huds.* 483. *Hull.* 254.

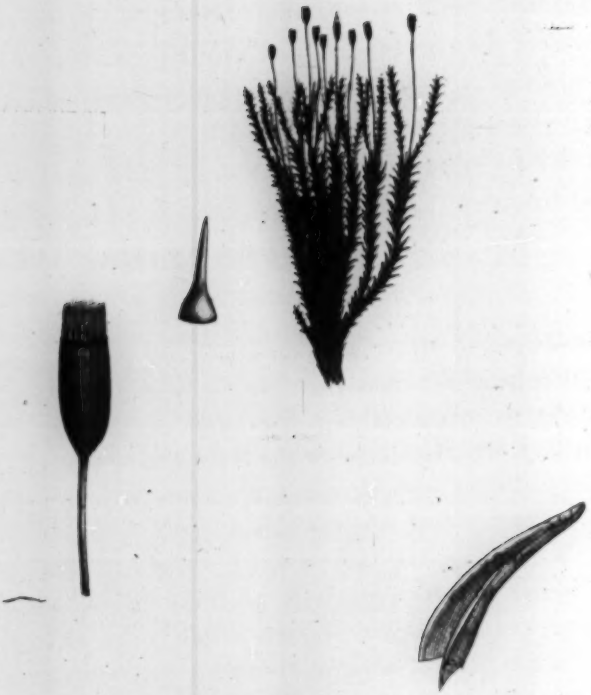
B. polytrichodes palustre, setis longioribus rubris sericeis. *Dill. Musc.* 387. *t.* 49. *f.* 52.

B. perangustis crebrioribus foliis, capitulis erectis, longiusculis pediculis e surculis annotinis innascentibus. *Dill. in Raii Syn.* 99.

Mnium purpureum, var. 2. *With.* 802.

SENT by Mr. Winch, from Prestwick Car in Northumberland. Many botanists have considered this elegant species as a mere variety of *D. purpureum*, *t.* 2262, from which it differs in several essential respects.

The stems are generally taller. The leaves are ovate at their base, but with much longer and more tapering points, that do not curl so much in drying. The beautiful fruitstalks, like threads of crimson silk, are an inch and half or two inches high, and sometimes grow two or three together from one point. The capsule is much more slender, curved, always furrowed in all stages of its growth, at least if dried, and the base does not exhibit that square contraction observable in *purpureum*. The present species moreover grows in boggy ground, not on walls or dry heaths.—We quote Hedwig here with doubt, merely because we have seen no authentic specimen of his *D. intermedium*.



June 1 1811 published by Jas Sowerby London

TRICHOSTOMUM linoides.

Flax-leaved Fringe-moss.

CRYPTOGAMIA Musci.

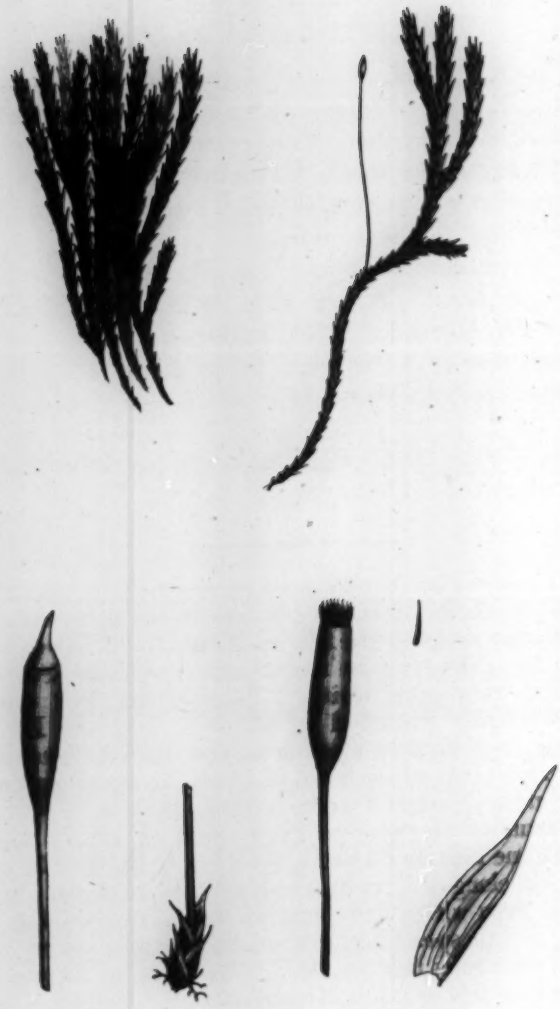
GEN. CHAR. *Caps.* oblong. *Fringe* of 32 capillary, straightish teeth, approximated or united in pairs.

SPEC. CHAR. Leaves lanceolate, bluntish with a minute point. Capsule ovate. Lid awlshaped, as long as the capsule. Stem but little branched.

SYN. Trichostomum linoides. *Sm. Fl. Brit.* 1247.
Bryum linoides. *Dicks. Crypt. fasc.* 3. 8. *t.* 8. *f.* 3. *With.* 824. *Hull.* 260. *Hedw. Sp. Musc.* 114.

WE are obliged to Mr. Winch for a far more perfect specimen of this beautiful moss than we had ever before seen, which enables us to correct the description in *Fl. Brit.* It was gathered by Mr. Backhouse at the High Force, Teesdale. Mr. Winch had found some less complete, several years ago, in Weardale, in the same neighbourhood.

The stems compose lax tufts in watery situations, and are from half an inch to two inches high, generally divided above the flowering point. Leaves rather distantly imbricated, spreading, bright green, but soon turning rusty, lanceolate, or somewhat ovate, keeled, entire, bluntish, their strong midrib extending into a minute point more or less evident. Fruitstalks red, at length brown, from half an inch to an inch high, solitary, terminating the shoots of the year preceding, twisted when dry. Capsule ovate, quite erect, brown; obscurely striated when old only; its mouth very slightly dilated. Lid awlshaped, slender, tawny, not more than the length of the capsule, very acute. Fringe reddish, scarcely half the same length, straight, not twisted.—In the specific character in *Fl. Brit.*, *calyptrâ* is accidentally written for *operculo*.



Jones ad nat. delin. et lith. by S. Curtis, Lambeth.

HYPNUM rufescens.

Shining Reddish Feather-moss.

CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* ovate-oblong, from a lateral scaly sheath. *Outer fringe* of 16 teeth, dilated at the base: *inner* a variously-toothed membrane. *Veil* smooth.

SPEC. CHAR. Stem erect. Branches elongated. Leaves lanceolate, pointed, striated, entire. Capsule cylindrical. Lid conical.

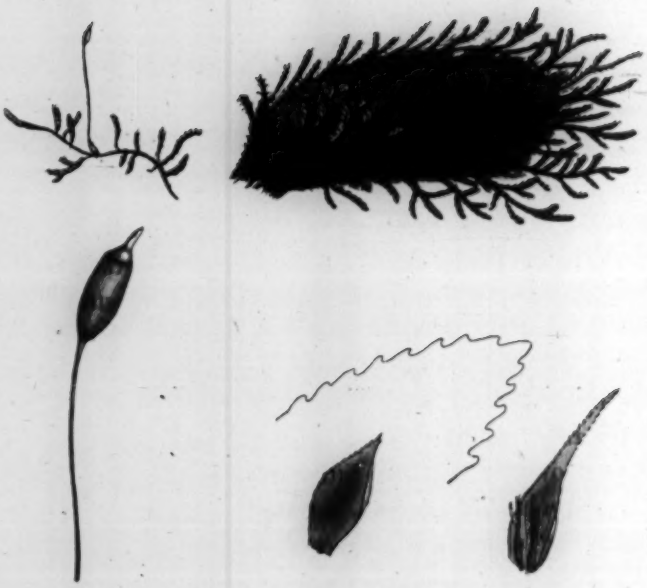
SYN. Hypnum rufescens. *Sm. Fl. Brit.* 1316. *Dicks. Crypt. fasc.* 3. 9. *t.* 8. *f.* 4. *With.* 846. *Hull.* 269. *Hoffm. Germ. v.* 2. 59, under *n.* 16.

H. caulibus vix ramosis, foliis subulatis aristatis, capsulis gracilibus. *Hall. in Act. Helvet. v.* 5. 12. *n.* 34.*

H. n. 1784. *Hall. Hist. v.* 3. 38; excluding the synonym of Dillenius.

FIRST noticed by Mr. Dickson on wet rocks in the Highlands of Scotland. Mr. W. Borrer found it covering the perpendicular rocks by the falls of Moness, and has favoured us with the only genuine fructification we have ever seen, which is a very great rarity. Its supposed fruit and the accompaniments, described in *Fl. Brit.* from the Linnæan herbarium, appear to be those of an undescribed *Hypnum*, or perhaps *Hookeria*, whose herbage is so like the present moss, that the greatest judges have been deceived by it.

The stems of *H. rufescens* grow erect, or loosely spreading, from one inch and a half to three in height, their branches more or less elongated, cylindrical, leafy throughout. Leaves yellowish green with a fine purplish tinge, very shining, imbricated, a little spreading, lanceolate, concave, entire, taper-pointed, sometimes hair-pointed, ribless, but so furrowed or plaited when dry as to look many-ribbed. Sheath of many broad pointed scales. Fruitstalk slender, above an inch long. Capsule cylindrical, nearly erect. Lid almost half as long, conical. Fringe reddish. We have not seen the inner one, but Mr. Borrer and Mr. Hooker assure us it is that of a *Hypnum*. The name *refuscens* in some of our authors above is an error of the press.



Hypnum cupressiforme L. Sp. Plant. ed. 1.

PTEROGONIUM filiforme.

Capillary-Wing-moss.

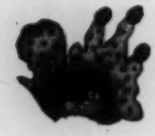
CRYPTOGAMIA Musci.

GEN. CHAR. *Caps.* oblong, from a lateral scaly sheath. *Fringe* simple, of 16 linear upright teeth. *Veil* generally hairy.

SPEC. CHAR. Stem decumbent, weak, irregularly branched, creeping. Leaves ovate, serrated, closely imbricated. Capsules ovate-oblong, erect.

SYN. Pterigynandrum filiforme. *Hedw. Sp. Musc.* 81. *Crypt. fasc.* 4. 18. *t.* 7.
Hypnum filiforme. *Timm. Megapolit.* 225.

DISCOVERED in Scotland, on Ben Lawers, by Mr. G. Don, and in Ireland by Mr. I. T. Mackay, since the 3d vol. of Fl. Brit. was published. It grows in dense, prostrate, entangled patches on rocks or stones, generally in the shade. The stems are long, creeping, leafy, very slender, irregularly divided into numerous, similar, or more slender, lax branches. Leaves scarcely shining, very small, closely imbricated in about four rows, sometimes a little turned to one side. Their form is ovate, acute, concave, serrated in their upper half, without rib or furrows. Male flowers we have not seen; Hedwig says they grow on a separate plant from the females. The capsules we have seen only on a specimen communicated by Professor Swartz. Their sheaths are pale, the scales with long taper serrated points. The fruitstalk is above half an inch long, slender, tawny. Capsule somewhat ovate, erect, smooth, shorter and thicker than that of *Pt. gracile*, *t.* 1085. Lid conical, with a slightly elongated, blunt, inclined point. We have not met with the veil.—The largest specimen in our plate came from Ireland, and has several female flowers, not yet come to fruit. Mr. J. D. Sowerby detected the serratures of the leaves, which escaped Hedwig.



Eaton published by Jas Sowerby London.

LICHEN sylvaticus.

Wood Pitted Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.
Female; smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Membranous, ascending, deeply lobed, bluntly cut, divaricated, of a greenish rusty hue, and somewhat pitted, above; beneath downy, tawny, blackish, with white pits. Shields marginal, vertical, convex, dark brown.

SYN. Lichen sylvaticus. *Huds.* 547. *Linn. Syst. Veg. ed.* 14. 961. *Achar. Prod.* 156. *With. v.* 4. 71. *Hull.* 300. *Lightf.* 848. *Sm. Tour to Hafod,* 12.
Lichenoides polyschides, villosum et scabrum, peltis parvis. *Dill. Musc.* 199. *t.* 27. *f.* 101.
Sticta sylvatica. *Achar. Meth.* 281. *Winch. v.* 2. 61.
Peltigera sylvatica. *Hoffm. Pl. Lich. v.* 1. 21. *t.* 4. *f.* 2.

WE have long waited, and have hunted for many an hour in vain, for British specimens of the shields of this Lichen, of which we once saw a fine specimen, sent by Dr. Burgess to Dr. Hope; so that we can vouch for the accuracy of what we are at length obliged to borrow from Hoffmann's beautiful work, at *fig.* 1. The plant itself, brought by Lady Wilson from the falls of Moness, is plentiful enough under trees in recluse mountainous woods of Oak, Birch, &c. The fronds compose light elastic tufts, as they spread nearly horizontally, slightly touching the ground or each other with their divaricated narrow lobes. Their upper surface is of a rich, often greenish, brown, full of little hollows; the under besprinkled with whitish pits, among short soft down; for this species belongs to the family of *Sticta*, see *t.* 1103, 1104. When moist, the whole has a fœtid alkaline scent. The shields stand pressed vertically to marginal segments, and are small, convex, brown, without borders.

Published by Sir J. Smith, London

LICHEN caninus.

Ash-coloured Ground Lichen.

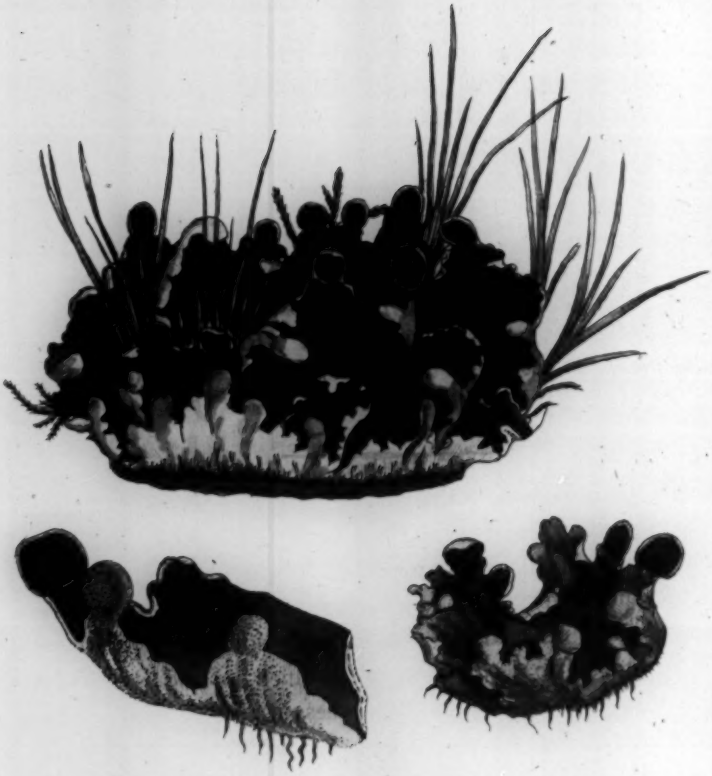
CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond coriaceous, dilated, ascending, furrowed, grey; white, with brown veins and fibres, beneath; lobes very broad, with marginal, fruit-bearing processes. Shields in front, vertical, revolute, roundish, red-brown, with a pale border.

SYN. Lichen caninus. *Linn. Sp. Pl.* 1616. *Achar. Prod.* 160. *Huds.* 546. *With. v.* 4. 69. *Hull.* 299. *Relh.* 465. *Sibth.* 331. *Abbot.* 267. *Woodv. Med. Bot. Suppl. t.* 273.
Lichenoides digitatum cinereum, lactucæ foliis sinuosis. *Dill. Musc.* 200. *t.* 27. *f.* 102.
L. peltatum terrestre cinereum majus, foliis divisis. *Raii Syn.* 76.
Peltidea canina. *Achar. Meth.* 283. *Winch. v.* 2. 61.

EVERY where abundant on heaths, banks, and about the roots of trees in shady woods. It is known by its larger size, more ash-coloured, and furrowed as if veiny, upper surface, and copious, distant, large, bright bay shields, from all of the same tribe; several of which are nearly related to, and have been considered as varieties of, the present plant. The leathery fronds form great patches, and when young especially are of a fine light grey, without polish, above; by age and repeated wet they grow darker. Warts are often found about the edges. The whitish under side has copious brown elevated veins, and often blackish, evenly scattered, radicles. At the margin are solitary, simple, broadish, convex lobes, each bearing only one large, perpendicular, orbicular, at length recurved, shield. This is the "Ash-coloured Ground Liverwort," once celebrated as a cure for the bite of a mad dog; but we believe it never acted, even on the *imagination* of the patient, though it might on that of the learned Dr. Mead. See Dill. Musc. 202.



Pubd. as published by J.ᵉ Sowerby London

LICHEN rufescens.

Dark-coloured Ground Lichen.

CRYPTOGAMIA Algæ.

GEN. CHAR. Male, scattered warts.
Female, smooth shields or tubercles, in which the seeds are imbedded.

SPEC. CHAR. Frond coriaceous, rigid, concave, even, dark reddish-brown; pale, downy, with obsolete veins, beneath; lobes rounded, with numerous fruit-bearing processes. Shields in front, vertical, roundish, dark brown, with a pale border.

SYN. Lichen rufescens. *Necker Musc.* 79. *Achar. Prod.* 166. *With. v.* 4. 70. *Hull.* 299.
L. caninus β. *Huds.* 546. *Sibth.* 331. *Lightf.* 846.
Lichenoides digitatum rufescens, foliis lactucæ crispis. *Dill. Musc.* 203. *t.* 27. *f.* 103.
L. peltatum terrestre rufescens. *Raii Syn.* 77.
Peltidea rufescens. *Ach. Meth.* 285; excluding the variety β. *Winch. v.* 2. 61.

EVEN more common than *L. caninus, t.* 2299, with which it is frequently confounded, but from which it differs sufficiently, as Dillenius well remarks, in the fronds being smaller, thicker and more rigid; their upper side concave in consequence of the inflexed margins, very smooth and even, except when cracked so as to look as if veined, of a darker sooty hue; turning reddish, or deep chesnut, in drying. The under side is more downy, with broader, more obsolete or superficial, veins. Shields numerous, smaller, and of a much darker brown.

Our learned friend Acharius, in his *Methodus,* makes *L. scutatus, t.* 1834, a variety of this; but in a letter dated Nov. 12, 1803, he, with his accustomed candour, acknowledges that he may be mistaken, and confesses himself not well acquainted with our true *rufescens.* Wulfen's figure, in Jacq. Coll. v. 4. t. 15, which seems to us *horizontalis,* may have misled Acharius respecting the *rufescens.*

2301

OPEGRAPHA cerasi.

Cherry-tree Opegrapha.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* in black, linear, sessile, simple or branched, bordered *clefts*, in an uninterrupted crust.

SPEC. CHAR. Crust limited, shining, white. Clefts immersed, linear, somewhat wavy, parallel, acute, simple or branched.

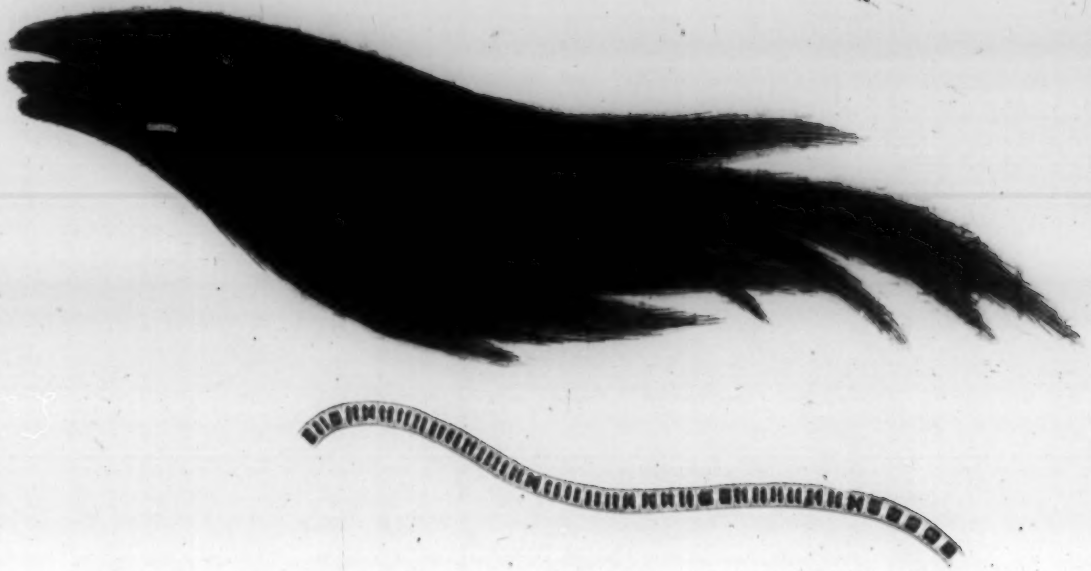
SYN. Opegrapha cerasi. *Ach. Meth.* 27. *Persoon in Ust. Ann. fasc.* 11. 20.

Lichen cerasi. *Ach. Prodr.* 26.

MR. W. BORRER has lately discovered this pretty and distinct species, on the barks of old cherry or plum trees.

The crust is cream-coloured, extended horizontally in narrow oblong patches partly round the tree, continued, distinctly limited, thin, rather rugged or scaly, but otherwise smooth and polished. Clefts also lying parallel to each other in the same horizontal direction, of a somewhat greyish black, straight or slightly wavy, acute at each end, sunk in the crust, sometimes coalescing or running into each other, so as to become branched. Their disk is very narrow and black; edges becoming elevated by age. The fructification is extremely well described both by Persoon and Acharius.

2302



CONFERVA bipartita.

Divided-jointed Conferva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Yellowish green. Filaments unbranched, slender, very long, in dense masses. Joints as long as broad, or longer, at length transversely separated internally.

SYN. Conferva bipartita. *Dillw. Conf. t.* 105. *Syn. n.* 19.

GATHERED in a salt-water ditch at Newhaven, Sussex, in March 1811, by Mr. W. Borrer, who suspects it may be Roth's *C. semistrangulata*, a question we have no means of determining.

The plant was drawn out by the stream into long twisted masses. Mr. Dillwyn observed his to float on the surface, retaining air-bubbles, like those various species formerly confounded together under the name of *C. bullosa*. The colour is a fine green, growing more yellow, as it appears, by age. Filaments simple, very long, slender and even. Joints in ours about as long as broad; Mr. Dillwyn found them likewise so, though in some specimens nearly thrice as long. This difference could not arise from any action of the stream on the growing plant, as the different kinds grew mixed together, and some joints were of an intermediate proportion. The great peculiarity of the species consists in the separation of the opaque green matter, contained in each joint, into two distinct portions, after the plant has arrived at a certain stage of growth.

Published by J. & Lowry, London

CONFERVA sordida.

Dirty Conferva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

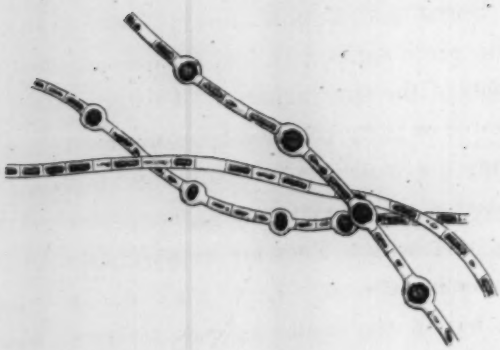
SPEC. CHAR. Pale olive green. Filaments unbranched, very slender, entangled in dense masses. Joints rather longer than broad, pellucid as well as their partitions.

SYN. Conferva sordida. *Roth Catal. fasc.* 1. 177. *t.* 2. *f.* 4. *Dillw. Conf. t.* 60. *Syn. n.* 21.

β. C. fugacissima. *Roth Catal. fasc.* 1. 176. *t.* 2. *f.* 3. *Dillw. Syn. n.* 20. *t.* B.

THIS is excellently described by Roth and Dillwyn as composing cloud-like or slimy semitransparent masses in clear stagnant pools, and adhering in that form to grasses or reeds that grow under water. When dislodged it floats on the surface, and assumes a dirty appearance, from "decayed vegetable matter and mud;" we suspect that, like many other aquatic plants, it causes the water to deposit earth, by absorbing the air which had been united with it. The filaments are very fine, even, simple, of a light green when young, turning of a very pale olive by age. Their joints are as long as broad, or twice as long, for we cannot but think, with Mr. Borrer, that the latter circumstance, which characterizes the *fugacissima*, is variable. The whole, with the partitions, is so extremely pellucid, that we can judge of the length of the joints only by observing the contraction or disturbance of the green matter within, which takes place very soon after gathering. The synonyms of Roth Mr. Dillwyn verified by a comparison with his specimens in Mr. Turner's herbarium.

2304.



CONFERVA alternata.

Alternate Conferva.

CRYPTOGAMIA Algæ.

GEN. CHAR. *Seeds* produced within the substance of the capillary or jointed frond, or in closed tubercles united with it.

SPEC. CHAR. Variegated with brown and green. Filaments unbranched, slender; joints half as long again as broad, alternately pellucid and opaque, here and there swelling.

SYN. Conferva alternata. *Dillw. Syn. n.* 22. *t.* B.
Prolifera vesicata. *Vaucher. Conf.* 132. *t.* 14. *f.* 4.

NOT uncommon in fresh-water pools and ditches in the spring. Mr. Borrer sent it from Sussex, observing that the brown and the green varieties of Mr. Dillwyn are often seen in different joints of the same filament. This gives the whole mass a changeable or party-coloured appearance.

The filaments are loosely entangled in light floating tufts, and are described as six or eight inches long, which is more than we have met with. They are extremely slender, and their coats perfectly pellucid. Each joint, nearly twice as long as broad, has in the centre a green or brown opaque mass, which in some of the joints either fails originally of coming to perfection, or contracts and disappears sooner than in others, and this difference takes place pretty exactly in an alternate order. Every third or fourth joint, however, in some filaments, is remarkably swelled, into a globular form, seemingly from the extraordinary turgescence of its green or brown contents, almost as in *C. inflata*, *t.* 1670.

G.R. III.